

Rabbit Nucleophosmin Polyclonal Antibody | anti-NPM1 antibody

Phospho-Nucleophosmin (Ser4) Antibody

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA329946	Rabbit	Human, Mouse, Rat Predicted Reactivity: Pig (100%), Bovine (100%), Horse (100%), Rabbit (100%), Dog (100%), Xenopus (100%)	ELISA, Immunocytochemistry, Immunofluorescence, Immunohistochemistry, Western Blot

PRODUCT SYNONYMS

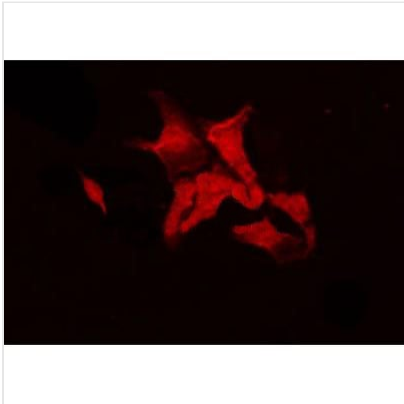
Nucleophosmin; Polyclonal Antibody; Phospho-Nucleophosmin (Ser4) Antibody; B23; MGC104254; NO38; NPM; NPM_HUMAN; NPM1; Nucleolar phosphoprotein B23; Nucleolar protein NO38; Nucleophosmin (nucleolar phosphoprotein B23 numatrin); nucleophosmin nucleoplasmin family member 1; Nucleophosmin/nucleoplasmin family member 1; Numatrin; OTTHUMP00000161024; OTTHUMP00000161025; OTTHUMP00000223397; OTTHUMP00000223398; anti-NPM1 antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse, Rat Predicted Reactivity: Pig (100%), Bovine (100%), Horse (100%), Rabbit (100%), Dog (100%), Xenopus (100%)
Clonality	Polyclonal
Isotype	Rabbit IgG
Specificity	Phospho-Nucleophosmin (Ser4) Antibody detects endogenous levels of Nucleophosmin only when phosphorylated at Ser4.
Purity/Purification	The antibody is from purified rabbit serum by affinity purification via sequential chromatography on phospho-peptide and non-phospho-peptide affinity columns.
Form/Format	Liquid. Rabbit IgG in phosphate buffered saline, pH7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Applicable Applications for anti-NPM1 antibody	ELISA (Peptide ELISA), ICC (Immunocytochemistry), IF (Immunofluorescence), IHC (Immunohistochemistry), WB (Western Blot)
Immunogen	A synthesized peptide derived from human Nucleophosmin around the phosphorylation site of Ser4.
Conjugation	Unconjugated
Fragment	Fab fragment
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. Ubiquitinated. Ubiquitination leads to proteasomal degradation. Deubiquitinated by USP36.

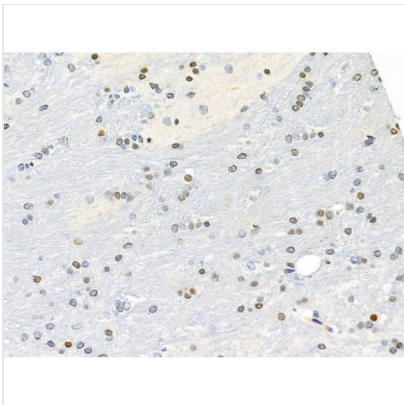
Subunit Structure	Decamer formed by two pentameric rings associated in a head-to-head fashion (By similarity). Disulfide-linked dimers under certain conditions. The SWAP complex consists of NPM1, NCL, PARP1 and SWAP70 (By similarity). Interacts with NSUN2 and SENP3. Interacts with the methylated form of RPS10. Interacts (via N-terminal domain) with APEX1; the interaction is RNA-dependent and decreases in hydrogen peroxide-damaged cells. Interacts with isoform 1 of NEK2. Interacts with ROCK2 and BRCA2. Interacts with RPGR. Interacts with CENPW. Interacts with EIF2AK2/PKR. Interacts with CEBPA (isoform 4). Interacts with DDX31; this interaction prevents interaction between NPM1 and HDM2. Interacts with MYC; competitive with NOP53. Interacts with NOP53; the interaction is direct and competitive with MYC. Interacts with LRRC34 (By similarity). Interacts with RRP1B. Interacts with NPM3. (Microbial infection) Interacts with hepatitis delta virus S-HDAg. (Microbial infection) Interacts with HTLV1 Rex protein (via N-terminal nuclear localization signal).
Similarity	Belongs to the nucleoplasmin family.
Subcellular Location	Nucleus>Nucleolus. Nucleus>Nucleoplasm. Cytoplasm>Cytoskeleton>Microtubule organizing center>Centrosome. Note: 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.
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.

IMAGES



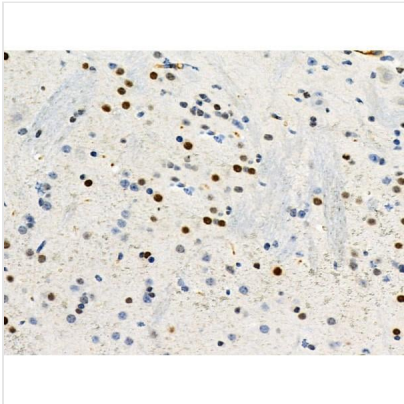
Application Data

At 25 degree C. The primary antibody was diluted at 1/200 and incubated with the sample for 1 hour at 37 degree C. An Alexa Fluor 594 conjugated goat anti-rabbit IgG (H+L) Ab, diluted at 1/600, was used as the secondary antibody.



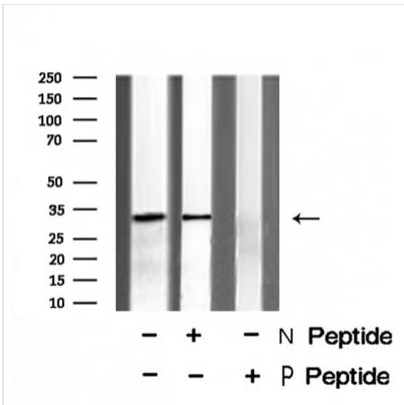
IHC (Immunohiostchemistry)

Staining Rat brain tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.



IHC (Immunohistochemisry)

At 1/100 staining Mouse brain tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary antibody at 4 degree C overnight. An HRP conjugated anti-Rabbit antibody was used as the secondary antibody.



WB (Western Blot)

Western blot analysis NPM (Phospho-Ser4) using EGF treated A431 whole cell lysates. -/+ means absence or presence of N peptide(¼ non-phospho peptide) and P peptide(phospho peptide).

ADDITIONAL INFORMATION

Related Product Information for anti-NPM1 antibody	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. In complex with MYC enhances the transcription of MYC target genes.
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NCBI AND UNIPROT INFORMATION

NCBI GI #	83641870
NCBI GeneID	4869
NCBI Accession #	NP_001032827.1
NCBI GenBank Nucleotide #	NM_001037738.2
UniProt Accession #	P06748; P08693; Q12826; Q13440; Q13441; Q14115; Q5EU94; Q5EU95; Q5EU96; A8K3N7; B5BU00; D3DQL6
Molecular Weight	32,575 Da
NCBI Official Full Name	nucleophosmin isoform 3
NCBI Official Synonym Full Names	nucleophosmin (nucleolar phosphoprotein B23, numatrin)
NCBI Official Symbol	NPM1
NCBI Official Synonym Symbols	B23; NPM
NCBI Protein Information	nucleophosmin; nucleolar protein NO38; nucleophosmin/nucleoplasmin family, member 1
UniProt Protein Name	Nucleophosmin
UniProt Gene Name	NPM1
UniProt Synonym Gene Names	NPM; NPM
UniProt Entry Name	NPM_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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