

Nucleophosmin Antibody
Purified Mouse Monoclonal Antibody
Catalog # AO1001a

Specification

Nucleophosmin Antibody - Product Information

Application	WB, IHC, IF
Primary Accession	P06748
Reactivity	Human, Monkey
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1
Calculated MW	33kDa KDa

Description

Nucleophosmin (NPM), also named B23 or NO38, is a major nucleolar protein which is 20 times more abundant in tumor or proliferating cells than in normal resting cells. NPM has been implicated in several distinct cellular functions, including assembly and transport of ribosomes, cytoplasmic/nuclear trafficking, regulation of DNA polymerase alpha activity, centrosome duplication and molecular chaperoning activities. The NPM is also known for its fusion with the anaplastic lymphoma kinase (ALK) receptor tyrosine kinase. The NPM portion contributes to transformation by providing a dimerization domain, which results in activation of the fused kinase.

Immunogen

Purified recombinant fragment of human NPM (2-265) expressed in E. Coli.

Formulation

Ascitic fluid containing 0.03% sodium azide.

Nucleophosmin Antibody - Additional Information

Gene ID 4869

Other Names

Nucleophosmin, NPM, Nucleolar phosphoprotein B23, Nucleolar protein NO38, Numatrin, NPM1, NPM

Dilution

WB~~1/500 - 1/2000
IHC~~1/200 - 1/1000
IF~~1/200 - 1/1000

Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions

Nucleophosmin Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Nucleophosmin Antibody - Protein Information

Name NPM1 ([HGNC:7910](#))

Synonyms NPM

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).

Cellular Location

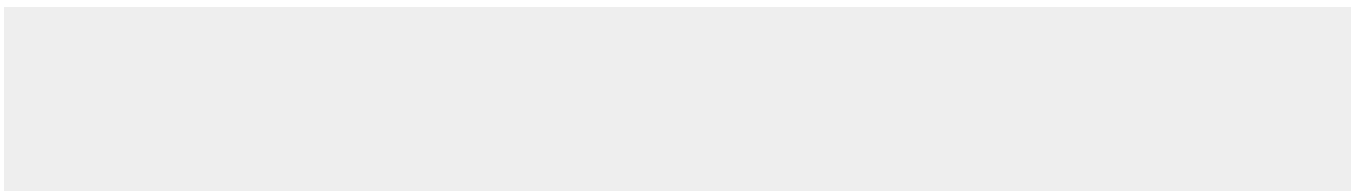
Nucleus, nucleolus. Nucleus, nucleoplasm. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome Note=Generally nucleolar, but is translocated to the nucleoplasm in case of serum starvation or treatment with anticancer drugs. Has been found in the cytoplasm in patients with primary acute myelogenous leukemia (AML), but not with secondary AML. 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. Can shuttle between cytoplasm and nucleus (PubMed:38231884)

Nucleophosmin Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

Nucleophosmin Antibody - Images



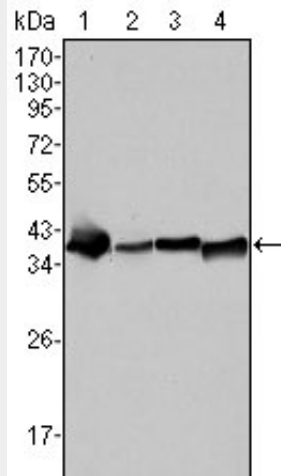


Figure 1: Western blot analysis using NPM mouse mAb against SMMC-7721 (1), HepG2 (2), HeLa (3) and HEK293 (4) cell lysate.

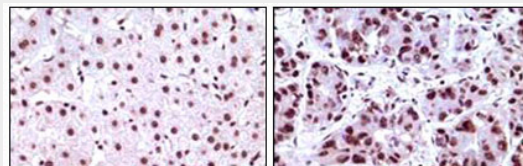


Figure 2: Immunohistochemical analysis of paraffin-embedded human liver carcinoma tissues, showing nuclear localization using NPM mouse mAb with DAB staining.

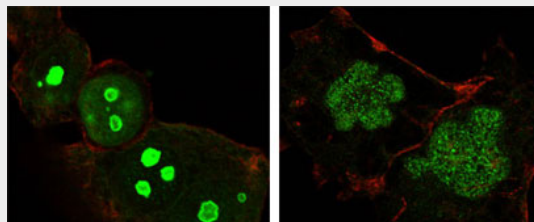


Figure 3: Confocal immunofluorescence analysis of HeLa (left) and NTERA-2 (right) cells using NPM mouse mAb (green). Red: Actin filaments have been labeled with DY-554 phalloidin.

Nucleophosmin Antibody - References

1. Morris SW, et al Science 1994 Mar 4; 263(5151):1281-4. 2. Yoneda-Kato N Oncogene 1996 Jan 18;12(2):265-75.