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NPM1 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2834b

Product Information

Application	FC, IHC-P, WB, IF, E
Primary Accession	P06748
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	32575
Antigen Region	198-226

Additional Information

Gene ID	4869
Other Names	Nucleophosmin, NPM, Nucleolar phosphoprotein B23, Nucleolar protein NO38, Numatrin, NPM1, NPM
Target/Specificity	This NPM1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 198-226 amino acids from the C-terminal region of human NPM1.
Dilution	FC~~1:10~50 IHC-P~~1:100~500 WB~~1:1000 IF~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	NPM1 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

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)

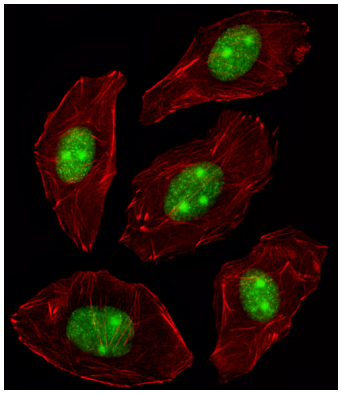
Background

NPM1 is a ubiquitously expressed nucleolar protein that shuttles between the nucleus and cytoplasm. It is implicated in multiple functions, including ribosomal protein assembly and transport, control of centrosome duplication, and regulation of the tumor suppressor ARF. NPM1 mutations that relocalize NPM1 from the nucleus into the cytoplasm are associated with development of acute myeloid leukemia.

References

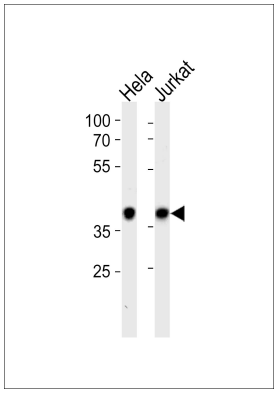
Vascotto,C., Mol. Cell. Biol. 29 (7), 1834-1854 (2009) Ma,W., Cancer Biomark 5 (1), 51-58 (2009) Zhang,H., J. Biol. Chem. 279 (34), 35726-35734 (2004)

Images

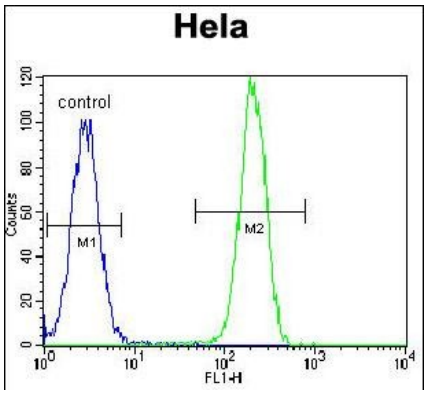


Fluorescent image of A549 cell stained with NPM1 Antibody (C-term)(Cat#AP2834b/SH090717BE).A549 cells were fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.1%, 10 min), then incubated with NPM1 primary antibody (1:25, 1 h at 37°C). For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:400, 50 min at 37°C).Cytoplasmic actin was counterstained with Alexa Fluor® 555 (red) conjugated Phalloidin (7units/ml, 1 h at 37°C).NPM1 immunoreactivity is localized to Nucleus and Nucleolus significantly.

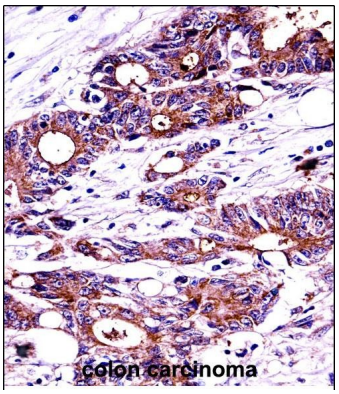
NPM1 Antibody (C-term) (Cat. #AP2834b) western blot



analysis in Hela,Jurkat cell line lysates (35ug/lane).This demonstrates the NPM1 antibody detected the NPM1 protein (arrow).



NPM1 Antibody (C-term) (Cat. #AP2834b) flow cytometric analysis of Hela cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.



NPM1 Antibody (C-term) (AP2834b)immunohistochemistry analysis in formalin fixed and paraffin embedded human colon carcinoma followed by peroxidase conjugation of the secondary antibody and DAB staining.This data demonstrates the use of NPM1 Antibody (C-term) for immunohistochemistry. Clinical relevance has not been evaluated.