abcam

Product datasheet

Mouse Nucleophosmin ELISA Kit ab216172

Recombinant SimpleStep ELISA

9 Images

Overview

Product name Mouse Nucleophosmin ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Plasma	8			3.9%

Inter-assay

Sample	n	Mean	SD	CV%
Plasma	3			4.8%

Sample type Cell culture supernatant, Serum, Cell culture extracts, Hep Plasma, EDTA Plasma, Cit plasma

Assay type Sandwich (quantitative)

Sensitivity 600 pg/ml

Range 1.56 ng/ml - 100 ng/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Serum	105	103% - 108%
Cell culture extracts	95	91% - 98%
Hep Plasma	108	105% - 112%
EDTA Plasma	114	113% - 116%
Cit plasma	107	103% - 111%

Assay time 1h 30m

Assay duration One step assay

Species reactivity

Reacts with: Mouse
Does not react with: Cow

Product overview

Mouse Nucleophosmin ELISA Kit (ab216172) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of Nucleophosmin protein in cell culture extracts, cell culture supernatant, cit plasma, edta plasma, hep plasma, and serum. It uses our proprietary SimpleStep ELISA® technology. Quantitate Mouse Nucleophosmin with 600 pg/ml sensitivity.

SimpleStep ELISA® technology employs capture antibodies conjugated to an affinity tag that is recognized by the monoclonal antibody used to coat our SimpleStep ELISA® plates. This approach to sandwich ELISA allows the formation of the antibody-analyte sandwich complex in a single step, significantly reducing assay time. See the SimpleStep ELISA® protocol summary in the image section for further details. Our SimpleStep ELISA® technology provides several benefits:

- Single-wash protocol reduces assay time to 90 minutes or less
- High sensitivity, specificity and reproducibility from superior antibodies
- Fully validated in biological samples
- 96-wells plate breakable into 12 x 8 wells strips

A 384-well SimpleStep ELISA® microplate (**ab203359**) is available to use as an alternative to the 96-well microplate provided with SimpleStep ELISA® kits.

Notes

Mouse Nucleophosmin is involved in an array of diverse cellular processes, including ribosome biogenesis, protein chaperoning, histone assembly, cell proliferation, and regulation of tumor suppressors p53/TP53 and ARF. In concert with BRCA2, Nucleophosmin also regulates centrosome duplication. Mouse Nucleophosmin is 292 aa in length and shares 99% and 95% sequence homology with rat and human Nucleophosmin, respectively.

Abcam has not and does not intend to apply for the REACH Authorisation of customers' uses of products that contain European Authorisation list (Annex XIV) substances.
It is the responsibility of our customers to check the necessity of application of REACH Authorisation, and any other relevant authorisations, for their intended uses.

Platform

Pre-coated microplate (12 x 8 well strips)

Properties

Storage instructions

Store at +4°C. Please refer to protocols.

Components	1 x 96 tests
10X Mouse Nucleophosmin Capture Antibody	1 x 600µl
10X Mouse Nucleophosmin Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
50X Cell Extraction Enhancer Solution (ab193971)	1 x 1ml
5X Cell Extraction Buffer PTR (ab193970)	1 x 10ml

Components	1 x 96 tests
Antibody Diluent CPI2	1 x 6ml
Mouse Nucleophosmin Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit
Sample Diluent NS (ab193972)	1 x 50ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit
Stop Solution	1 x 12ml
TMB Development Solution	1 x 12ml

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

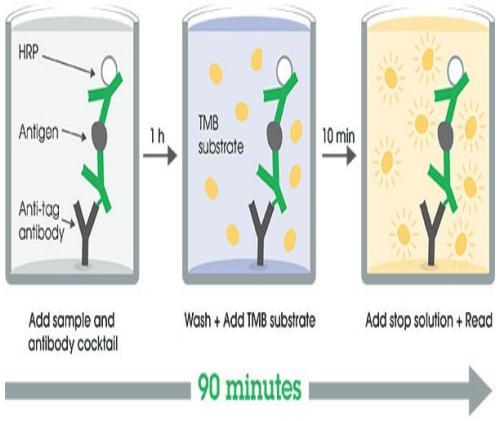
Belongs to the nucleoplasmin family.

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 phosphorated, 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.

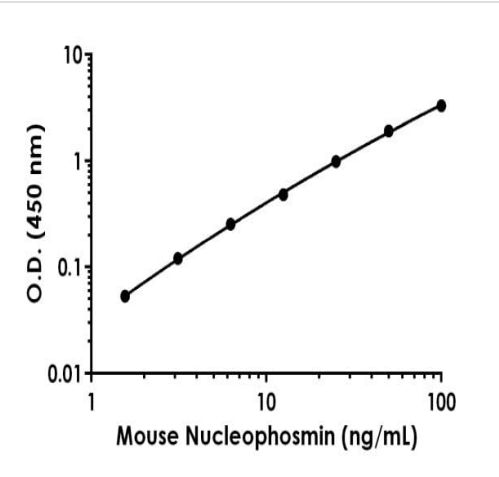
Cellular localization	Nucleus, nucleolus. Nucleus, nucleoplasm. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Generally nucleolar, but is translocated to the nucleoplasm in case of serum starvation or treatment with anticancer drugs. Has been found in the cytoplasm in patients with 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



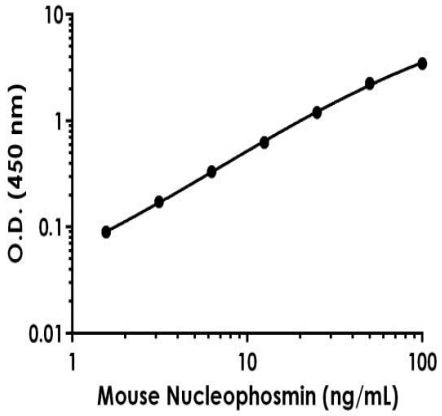
Other - Mouse Nucleophosmin ELISA Kit (ab216172)

SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.



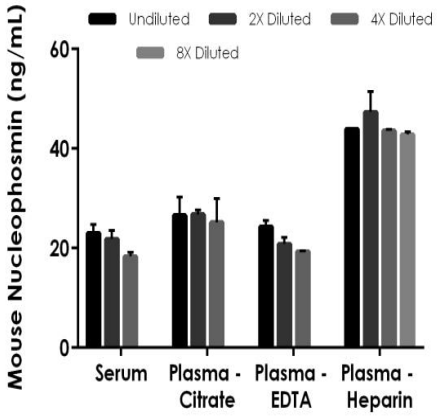
Example of mouse Nucleophosmin standard curve in Sample Diluent NS.

Background-subtracted data values (mean +/- SD) are graphed.



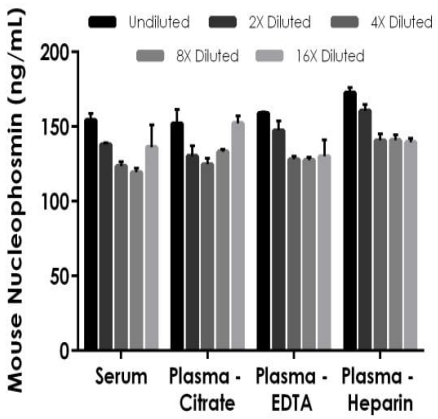
Example of mouse Nucleophosmin standard curve in 1X Cell Extraction Buffer PTR.

Background-subtracted data values (mean +/- SD) are graphed.



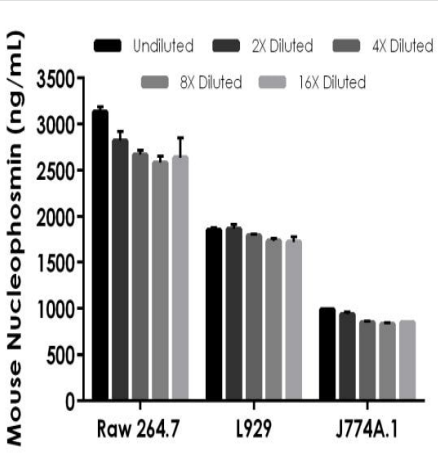
Interpolated concentrations of native Nucleophosmin in mouse serum and plasma samples.

The concentrations of Nucleophosmin were measured in duplicates, interpolated from the Nucleophosmin standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 50%, plasma (citrate) 50%, plasma (EDTA) 50%, and plasma (heparin) 50%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Nucleophosmin concentration was determined to be 21.07 ng/mL in neat serum, 26.17 ng/mL in neat plasma (citrate), 21.49 ng/mL in neat plasma (EDTA), and 44.43 ng/mL in neat plasma (heparin).



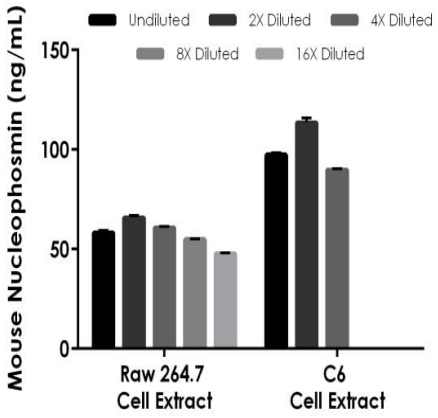
Interpolated concentrations of spiked Nucleophosmin in mouse serum and plasma samples.

The concentrations of Nucleophosmin were measured in duplicates, interpolated from the Nucleophosmin standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 50%, plasma (citrate) 50%, plasma (EDTA) 50%, and plasma (heparin) 50%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Nucleophosmin concentration was determined to be 134.31 ng/mL in neat serum, 138.54 ng/mL in neat plasma (citrate), 138.47 ng/mL in neat plasma (EDTA), and 150.88 ng/mL in neat plasma (heparin).



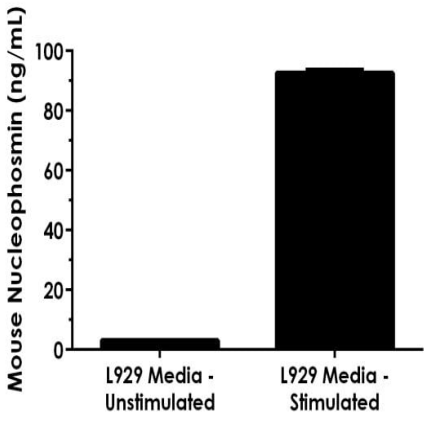
Interpolated concentrations of native Nucleophosmin in mouse cell culture supernatant samples.

The concentrations of Nucleophosmin were measured in duplicates, interpolated from the Nucleophosmin standard curves and corrected for sample dilution. Undiluted samples are as follows: RAW 264.7 media 2.5%, L929 media 5%, and J774A.1 media 10%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Nucleophosmin concentration was determined to be 2,767.43 ng/mL in neat RAW 264.7 media, 1,790.80 ng/mL in neat L929 media, and 889.01 ng/mL in neat J774A.1 media. RAW 264.7 media was cultured in HGDMEM media with kanamycin and L-glutamine for 24 hours (serum free) and then for another 48 hours with 1% PHA. J774A.1 media was cultured for 72 hours in HGDMEM media with kanamycin, 10% fetal bovine serum, and 1.5% PHA plus 10 ng/mL PMA. L929 media was cultured for 72 hours in MEM media with kanamycin, 10% horse serum, and 1.5% PHA plus 10 ng/mL PMA.



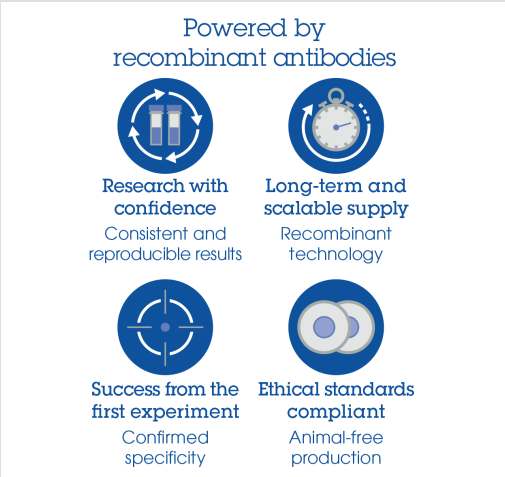
Interpolated concentrations of native Nucleophosmin in mouse RAW 264.7 cell extract and C6 cell extract samples based on 250 µg/mL and 500 µg/mL extract loads, respectively.

The concentrations of Nucleophosmin were measured in duplicate and interpolated from the Nucleophosmin standard curve and corrected for sample dilution. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Nucleophosmin concentration was determined to be 57.49 ng/mL in RAW 264.7 cell extract and 100.26 ng/mL in C6 cell extract.



Interpolated concentrations of native Nucleophosmin in unstimulated and stimulated L929 cultured media.

The concentrations of Nucleophosmin were measured in duplicates, interpolated from the Nucleophosmin standard curves and corrected for sample dilution. Undiluted samples are as follows: L929 unstimulated media 5% and L929 stimulated media 5%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Nucleophosmin concentration was determined to be 3.12 ng/mL in neat unstimulated L929 media, and 92.60 ng/mL in neat stimulated L929 media. L929 media was cultured for 72 hours in MEM media with kanamycin and 10% horse serum without (unstimulated) and with (stimulated) 1.5% PHA plus 10 ng/mL PMA.



Sandwich ELISA - Mouse Nucleophosmin ELISA Kit (ab216172)

To learn more about the advantages of recombinant antibodies see **here**.

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