abcam

ab247543

Anti-NM23A antibody [EPR3036] - BSA and Azide free

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR3036
Purification technique	Affinity purification Protein A
Concentration	0.981 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-

Notes	Overnight incubation is recommended.

IP

Not recommended

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information NME1

Function Catalyzes the transfer of a gamma-phosphoryl group from a nucleoside triphosphate, mainly ATP, to a nucleoside diphosphate via a ping-pong mechanism involving a phosphohistidine intermediate, therefore contributing to the nucleoside triphosphate homeostasis (PubMed:10952986, PubMed:14960567, PubMed:16313181, PubMed:1851158, PubMed:23519676, PubMed:33903070, PubMed:8810265, PubMed:9038158). Also phosphorylates geranyl pyrophosphate (GPP) and farnesyl pyrophosphate (FPP), linking it to isoprenoid metabolism (PubMed:10952986). Additionally, functions as a non-specific serine/threonine kinase and histidine protein kinase, transferring phosphoryl groups from its active site to target proteins (PubMed:8529641, PubMed:9038158). May function as a Mg(2+)-dependent single-stranded DNA endonuclease as part of the SET complex,

cooperating with the 3'-5' exonuclease TREX1 to mediate apoptotic DNA fragmentation in cytotoxic T lymphocytes (PubMed:12628186, PubMed:16818237). Reported to nick one DNA strand, enabling TREX1 to remove nucleotides from the free 3' end, enhancing DNA damage and suppressing DNA end reannealing and repair (PubMed:16818237). Has been shown to cleave double strands DNA within the 3'-portions of both 5'-SHS silencer and NHE basal promoter element of the PDGFA gene, potentially repressing its transcription (PubMed:11694515). May also function as a Mg(2+)-dependent 3'-5' DNA exonuclease, excising nucleotides from 3' single-stranded DNA or DNA with 3' single strand overhangs, suggesting a role in DNA nucleolytic processing (PubMed:14960567, PubMed:16313181). Involved in the regulation of tumor metastasis and cellular differentiation (By similarity). Also required for cell motility (PubMed:8270257, PubMed:25582197). May control, with NME2, AcCoA usage between histone acetylation and fatty acid synthesis, possibly by binding and releasing AcCoA at transcriptionally active chromatin regions in proximity to histone acetyltransferase (HAT) (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab247543 is the carrier-free version of ab92327.

Species reactivity

Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

Patented technology

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?

This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide

and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	NM23A also known as NME1 (non-metastatic cells 1 protein) is a nucleoside diphosphate kinase A. NM23A weighs approximately 17 kDa. This protein is expressed in a variety of tissues with high levels in liver brain and endocrine tissues. By exchanging phosphate groups NM23A is involved in energy transfer in cells. It stabilizes proteins by forming hexameric complexes which are pivotal for its function.
Biological function summary	The NME1 protein plays a significant role in cell proliferation and differentiation. It acts as a marker for the metastatic potential of some tumors where lower expression links to increased metastatic abilities in tumor cells. This protein sometimes works as part of a larger multiprotein complex which influences its functions in cellular processes. It is known for modulating microtubule assembly which affects cell structure and mechanics.
Pathways	NM23A is an important player in signal transduction and DNA repair pathways. It is essential in the regulation of the Ras-MAPK pathway which controls cell growth and differentiation. NM23A interacts with key regulatory proteins such as c-Myc and APC to uphold cellular activities. The protein's influence in these pathways indicates its role in sustaining normal cellular functions and responses.
Associated diseases and disorders	NM23A relates closely to cancer particularly in metastatic processes and tumor progression. Lower levels of NM23A are associated with the progression of neuroblastoma and breast cancer. In breast cancer NM23A links to the tumor suppressor gene p53 affecting its regulatory functions. Research continues into how NM23A can serve as a useful biomarker for prognosis and therapy in cancer treatment.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

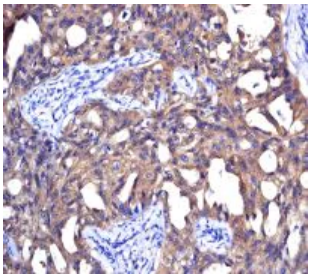
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

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4 product images

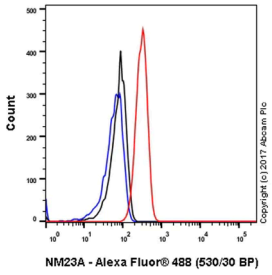


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NM23A antibody [EPR3036] - BSA and Azide free (ab247543)

NM23A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-NM23A antibody

This data was developed using ab92327, the same antibody clone in a different buffer formulation. ab92327, at a dilution of 1/100, staining NM23A in formalin fixed, paraffin embedded Human lung adenocarcinoma tissue by Immunohistochemistry. Detection: DAB staining

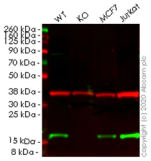
Heat mediated antigen retrieval was performed via the pressure cooker method before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-NM23A antibody [EPR3036] - BSA and Azide free (ab247543)

NM23A Flow Cytometry (Intracellular) staining using rabbit Anti-NM23A antibody

This data was developed using ab92327, the same antibody clone in a different buffer formulation. Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) cells labeling NM23A with unpurified ab92327 at 1/50 dilution (10ug/ml) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti-rabbit IgG (Alexa Fluor® 488) (1/2000 dilution) was used as the secondary antibody. Rabbit monoclonal IgG (Black) was used as the isotype control, cells without incubation with primary antibody and secondary antibody (Blue) were used as the unlabeled control.



Western blot - Anti-NM23A antibody [EPR3036] - BSA and Azide free (ab247543)

NM23A Western blot staining using rabbit Anti-NM23A antibody

This data was developed using the same antibody clone in a different buffer formulation (ab92327).
Lanes 1-4: Merged signal (red and green). Green - ab92327 observed at 17 kDa. Red - loading control ab8245 observed at 36 kDa.

ab92327 Anti-NM23A antibody [EPR3036] was shown to specifically react with NM23A in wild-type HEK293T cells. Loss of signal was observed when knockout cell line ab266215 (knockout cell lysate ab258075) was used. Wild-type and NM23A knockout samples were subjected to SDS-PAGE. ab92327 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) were incubated overnight at 4°C at 1 in 1000 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-NM23A antibody [EPR3036] (ab92327) at 1/1000 dilution

Lane 1:
Wild-type HEK293T cell lysate at 20 µg

Lane 2:
NME1 knockout HEK293T cell lysate at 20 µg

Lane 2:
Western blot - Human NME1 (NM23A) knockout HEK-293T cell line (ab266215)

Lane 3:
MCF7 cell lysate at 20 µg

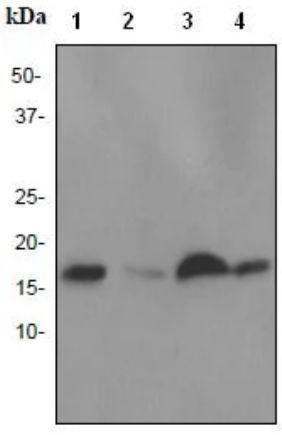
Lane 4:
Jurkat cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/10000 dilution

Predicted band size: 17 kDa

Observed band size: 17 kDa



Western blot - Anti-NM23A antibody [EPR3036] - BSA and Azide free (ab247543)

This data was developed using ab92327, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-NM23A antibody [EPR3036] (ab92327) at 1/5000 dilution

Lane 1:
MCF-7 cell lysate at 10 µg

Lane 2:
A375 cell lysate at 10 µg

Lane 3:
HeLa cell lysate at 10 µg

Lane 4:
Jurkat cell lysate at 10 µg

Secondary

All lanes:
HRP labelled goat anti-rabbit at 1/2000 dilution

Predicted band size: 17 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.