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NME4 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8153b

Product Information

Application	WB, IHC-P, E
Primary Accession	O00746
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB4058
Calculated MW	20659
Antigen Region	158-187

Additional Information

Gene ID	4833
Other Names	Nucleoside diphosphate kinase, mitochondrial, NDK, NDP kinase, mitochondrial, Nucleoside diphosphate kinase D, NDPKD, nm23-H4, NME4, NM23D
Target/Specificity	This NME4 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 158-187 amino acids from the C-terminal region of human NME4.
Dilution	WB~~1:1000 IHC-P~~1:100~500 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	NME4 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	NME4 (HGNC:7852)
Synonyms	NM23D
Function	Mitochondria-specific nucleoside diphosphate kinase that catalyzes the

	transfer of a gamma-phosphoryl group from ATP to a nucleoside diphosphate via a ping-pong mechanism involving a phosphohistidine intermediate, participating in nucleoside triphosphate homeostasis (PubMed:10799505, PubMed:16313181, PubMed:18635542, PubMed:23150663). In vitro, purine nucleoside triphosphates are much more effective as donors and acceptors than pyrimidine nucleoside triphosphates, and ribonucleosides derivatives are superior to their deoxyribonucleosides counterparts (By similarity). Associates with cardiolipin-containing mitochondrial inner membrane and locally produces ADP in the mitochondrial intermembrane space, which is directly taken up via the ADP/ATP translocase (ANT) into the matrix to stimulate respiratory ATP regeneration (PubMed:18635542, PubMed:24970086). Also directly provides GTP for mitochondrial GTPases, such as the dynamin-related GTPase OPA1 (PubMed:24970086). Additionally, catalyzes the anionic phospholipid transfer, namely cardiolipin, from the mitochondrial inner membrane (IM) to the outer membrane (OM) through the formation of contact sites between IM and OM, in a nucleoside diphosphate kinase-independent manner (PubMed:17028143, PubMed:23150663). The switch between the nucleoside diphosphate kinase and the phospholipid transfer activity may depend on the availability and accessibility of cardiolipin and other anionic phospholipids in the IM outer leaflet and OM inner leaflet (PubMed:23150663).
Cellular Location	Mitochondrion intermembrane space; Peripheral membrane protein Mitochondrion matrix. Mitochondrion outer membrane Note=Predominantly localized in the mitochondrion intermembrane space (PubMed:18635542). Colocalizes with OPA1 in mitochondria (Probable) (PubMed:24970086). Phospholipid binding mediates mitochondrial inner membrane binding (Probable) (PubMed:18635542). Fully membrane-bound, when attached simultaneously to inner membrane (IM) and outer membrane (OM) through the formation of contact sites between IM and OM (Probable) (PubMed:17028143). The additional binding to OM may depend on the availability or accessibility of cardiolipin and/or other anionic phospholipids in the IM outer leaflet and the OM inner leaflet (Probable).
Tissue Location	Widely distributed. Found at very high levels in prostate, heart, liver, small intestine, and skeletal muscle tissues, and in low amounts in the brain and in blood leukocytes

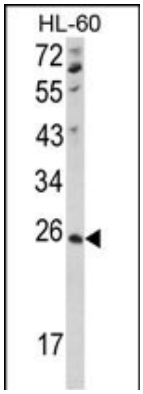
Background

Protein kinases are enzymes that transfer a phosphate group from a phosphate donor, generally the g phosphate of ATP, onto an acceptor amino acid in a substrate protein. By this basic mechanism, protein kinases mediate most of the signal transduction in eukaryotic cells, regulating cellular metabolism, transcription, cell cycle progression, cytoskeletal rearrangement and cell movement, apoptosis, and differentiation. With more than 500 gene products, the protein kinase family is one of the largest families of proteins in eukaryotes. The family has been classified in 8 major groups based on sequence comparison of their tyrosine (PTK) or serine/threonine (STK) kinase catalytic domains. The AGC kinase group consists of 63 kinases including the cyclic nucleotide-regulated protein kinase (PKA & PKG) family, the diacylglycerol-activated/phospholipid-dependent protein kinase C (PKC) family, the related to PKA and PKC (RAC/Akt) protein kinase family, the kinases that phosphorylate G protein-coupled receptors family (ARK), and the kinases that phosphorylate ribosomal protein S6 family (RSK).

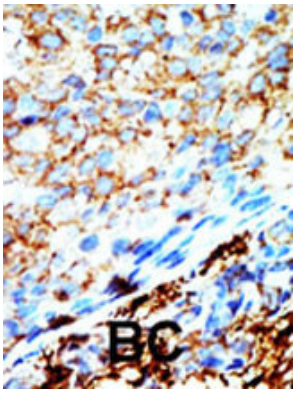
References

Milon, L., et al., Hum. Genet. 99(4):550-557 (1997).

Images



Western blot analysis of hNME4-V173 (Cat. #AP8153b) in HL-60 cell line lysates (35ug/lane). NME4 (arrow) was detected using the purified Pab.



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

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