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NEK7 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8078a

Product Information

Application	WB, IHC-P, E
Primary Accession	Q8TDX7
Other Accession	D3ZBE5
Reactivity	Human
Predicted	Rat, Mouse, Bovine, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB2967/2968
Calculated MW	34551
Antigen Region	1-30

Additional Information

Gene ID	140609
Other Names	Serine/threonine-protein kinase Nek7, Never in mitosis A-related kinase 7, NimA-related protein kinase 7, NEK7
Target/Specificity	This NEK7 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1-30 amino acids from the N-terminal region of human NEK7.
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 purified through a protein A column, followed by peptide affinity purification.
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	NEK7 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	NEK7 {ECO:0000303|PubMed:11701951, ECO:0000312|HGNC:HGNC:13386}
Function	Protein kinase which plays an important role in mitotic cell cycle progression (PubMed:17101132, PubMed:19941817, PubMed:31409757).

	Required for microtubule nucleation activity of the centrosome, robust mitotic spindle formation and cytokinesis (PubMed:17586473, PubMed:19414596, PubMed:19941817, PubMed:26522158, PubMed:31409757). Phosphorylates EML4 at 'Ser-146', promoting its dissociation from microtubules during mitosis which is required for efficient chromosome congression (PubMed:31409757). Phosphorylates RPS6KB1 (By similarity). Acts as an essential activator of the NLRP3 inflammasome assembly independently of its kinase activity (PubMed:26642356, PubMed:36442502, PubMed:39173637). Acts by unlocking NLRP3 following NLRP3 tranlocation into the microtubule organizing center (MTOC), relieving NLRP3 autoinhibition and promoting formation of the NLRP3:PYCARD complex, and activation of CASP1 (PubMed:26642356, PubMed:31189953, PubMed:36442502, PubMed:39173637, PubMed:40450990). Serves as a cellular switch that enforces mutual exclusivity of the inflammasome response and cell division: interaction with NEK9 prevents interaction with NLRP3 and activation of the inflammasome during mitosis (PubMed:26642356, PubMed:31189953).
Cellular Location	Nucleus {ECO:0000250|UniProtKB:Q9ES74}. Cytoplasm. Cytoplasm, cytoskeleton, spindle pole. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Note=Present at centrosome throughout the cell cycle (PubMed:17586473). Also detected at spindle midzone of the anaphase cells and eventually concentrates at the midbody (PubMed:17586473). Interaction with ANKS3 prevents its translocation to the nucleus (By similarity). {ECO:0000250|UniProtKB:Q9ES74, ECO:0000269|PubMed:17586473}
Tissue Location	Highly expressed in lung, muscle, testis, brain, heart, liver, leukocyte and spleen. Lower expression in ovary, prostate and kidney. No expression seen in small intestine

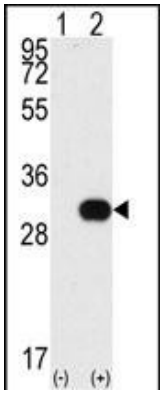
Background

NIMA-related kinases share high amino acid sequence identity with the gene product of the Aspergillus nidulans 'never in mitosis A' gene, which controls initiation of mitosis.[supplied by OMIM]

References

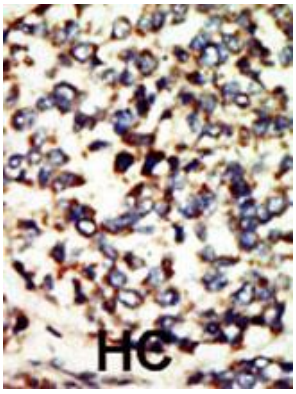
Belham, C., et al., J. Biol. Chem. 278(37):34897-34909 (2003).
Kimura, M., et al., Cytogenet. Cell Genet. 94 (1-2), 33-38 (2001).

Images

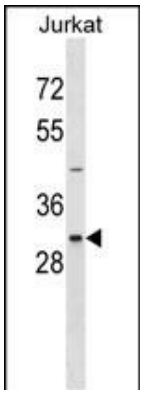


Western blot analysis of NEK7 (arrow) using NEK7 Antibody (N-term) (Cat.#AP8078a). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected with the NEK7 gene (Lane 2) (Origene Technologies).

Formalin-fixed and paraffin-embedded human cancer



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



NEK7 Antibody (M8) (Cat. #AP8078a) western blot analysis in Jurkat cell line lysates (35ug/lane).This demonstrates the NEK7 antibody detected the NEK7 protein (arrow).

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