

Nemo-like kinase Rabbit pAb

Catalog # AP99589

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	Q9UBE8
Other Accession	Q9UBE8
Host	Rabbit
Clonality	Polyclonal
Calculated MW	58283
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human Nemo-like kinase
Epitope Specificity	101-200/527
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the GPI family.
SUBUNIT	Homodimer in the catalytically active form, monomer in the secreted form.
Post-translational modifications	Phosphorylated on Thr-298. Intermolecular autophosphorylation on Thr-298 activates the enzyme.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Nemo-like kinase (NLK) plays a role in cell fate determination and is required for differentiation of bone marrow stromal cells. It acts downstream of MAP3K7 and HIPK2 to negatively regulate the canonical Wnt/beta-catenin signaling pathway and the phosphorylation and destruction of the MYB transcription factor. It may suppress a wide range of transcription factors by phosphorylation of the coactivator, CREBBP. (referenced from swissprot)

Additional Information

Gene ID	51701
Other Names	RGD1561602; NLK_HUMAN; NLK; Nemo-like kinase; Protein LAK1; 2.7.11.24; LAK1; NLK_MOUSE; NLK_RAT; nemo like kinase
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	NLK
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Synonyms

LAK1 {ECO:0000312|EMBL:AAD56013.1}

Function

Serine/threonine-protein kinase that regulates a number of transcription factors with key roles in cell fate determination (PubMed:[12482967](#), PubMed:[14960582](#), PubMed:[15004007](#), PubMed:[15764709](#), PubMed:[20061393](#), PubMed:[20874444](#), PubMed:[21454679](#)). Positive effector of the non-canonical Wnt signaling pathway, acting downstream of WNT5A, MAP3K7/TAK1 and HIPK2 (PubMed:[15004007](#), PubMed:[15764709](#)). Negative regulator of the canonical Wnt/beta-catenin signaling pathway (PubMed:[12482967](#)). Binds to and phosphorylates TCF7L2/TCF4 and LEF1, promoting the dissociation of the TCF7L2/LEF1/beta-catenin complex from DNA, as well as the ubiquitination and subsequent proteolysis of LEF1 (PubMed:[21454679](#)). Together these effects inhibit the transcriptional activation of canonical Wnt/beta-catenin target genes (PubMed:[12482967](#), PubMed:[21454679](#)). Negative regulator of the Notch signaling pathway (PubMed:[20118921](#)). Binds to and phosphorylates NOTCH1, thereby preventing the formation of a transcriptionally active ternary complex of NOTCH1, RBPJ/RBPSUH and MAML1 (PubMed:[20118921](#)). Negative regulator of the MYB family of transcription factors (PubMed:[15082531](#)). Phosphorylation of MYB leads to its subsequent proteolysis while phosphorylation of MYBL1 and MYBL2 inhibits their interaction with the coactivator CREBBP (PubMed:[15082531](#)). Other transcription factors may also be inhibited by direct phosphorylation of CREBBP itself (PubMed:[15082531](#)). Acts downstream of IL6 and MAP3K7/TAK1 to phosphorylate STAT3, which is in turn required for activation of NLK by MAP3K7/TAK1 (PubMed:[15004007](#), PubMed:[15764709](#)). Upon IL1B stimulus, cooperates with ATF5 to activate the transactivation activity of C/EBP subfamily members (PubMed:[25512613](#)). Phosphorylates ATF5 but also stabilizes ATF5 protein levels in a kinase-independent manner (PubMed:[25512613](#)). Acts as an inhibitor of the mTORC1 complex in response to osmotic stress by mediating phosphorylation of RPTOR, thereby preventing recruitment of the mTORC1 complex to lysosomes (PubMed:[26588989](#)).

Cellular Location

Nucleus {ECO:0000250|UniProtKB:O54949}. Cytoplasm {ECO:0000250|UniProtKB:O54949}. Note=Predominantly nuclear. A smaller fraction is cytoplasmic. {ECO:0000250|UniProtKB:O54949}

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