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NLK Antibody

Mouse Monoclonal Antibody (Mab)
Catalog # AW5194

Product Information

Application	WB
Primary Accession	Q9UBE8
Reactivity	Human
Predicted	Mouse, Rat
Host	Mouse
Clonality	Monoclonal
Calculated MW	58283
Isotype	IgG2a
Antigen Source	Human

Additional Information

Gene ID	51701
Antigen Region	10-210
Other Names	NLK;LAK1; Serine/threonine-protein kinase NLK; Serine/threonine-protein kinase NLK; Nemo-like kinase; Serine/threonine-protein kinase NLK; Protein LAK1
Dilution	WB~~1:1000
Target/Specificity	Purified His-tagged NLK protein was used to produced this monoclonal antibody.
Format	Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, 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	NLK Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	NLK
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}

Background

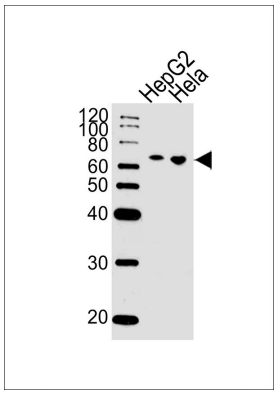
Serine/threonine-protein kinase that regulates a number of transcription factors with key roles in cell fate determination. Positive effector of the non-canonical Wnt signaling pathway, acting downstream of WNT5A, MAP3K7/TAK1 and HIPK2. Activation of this pathway causes binding to and phosphorylation of the histone methyltransferase SETDB1. The NLK-SETDB1 complex subsequently interacts with PPARG, leading to methylation of PPARG target promoters at histone H3K9 and transcriptional silencing. The resulting loss of PPARG target gene transcription inhibits adipogenesis and promotes osteoblastogenesis in mesenchymal stem cells (MSCs). Negative regulator of the canonical Wnt/beta-catenin signaling pathway. 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. Together these effects inhibit the transcriptional activation of canonical Wnt/beta-catenin target genes. Negative regulator of the Notch signaling pathway. Binds to and phosphorylates NOTCH1, thereby preventing the formation of a transcriptionally active ternary complex of NOTCH1, RBPJ/RBPSUH and MAML1. Negative regulator of the MYB family of transcription factors. Phosphorylation of MYB leads to its subsequent proteolysis while phosphorylation of MYBL1 and MYBL2 inhibits their interaction with the coactivator CREBBP. Other transcription factors may also be inhibited by direct phosphorylation of CREBBP itself. Acts downstream of IL6 and MAP3K7/TAK1 to phosphorylate STAT3, which is in turn required for activation of NLK by MAP3K7/TAK1.

References

Kehrer-Sawatzki H., et al. Gene 251:63-71(2000).

Wang C., et al. Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases.
Ota T., et al. Nat. Genet. 36:40-45(2004).
Ishitani T., et al. Mol. Cell. Biol. 23:131-139(2003).
Ohkawara B., et al. Genes Dev. 18:381-386(2004).

Images



Western blot analysis of lysates from HepG2,Hela cell line (from left to right), using NLK Antibody(Cat. #AW5194). AW5194 was diluted at 1:1000 at each lane. A goat anti-mouse IgG H&L(HRP) at 1:10000 dilution was used as the secondary antibody.Lysates at 20ug per lane.

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