

Product datasheet for **SC124920**

NLK (NM_016231) Human Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	NLK (NM_016231) Human Untagged Clone
Tag:	Tag Free
Symbol:	NLK
Mammalian Cell Selection:	None
Vector:	<u>pCMV6-XL4</u>
E. coli Selection:	Ampicillin (100 ug/mL)
Fully Sequenced ORF:	>OriGene ORF sequence for NM_016231 edited

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ATGGCGGCTTACAATGGCGGTACATCTGCAGCAGCAGCAGGTACCACCACCACCATCAC
CACCACCTTCCACACCTCCCTCCTCCTCACCTGCACCACCACCACCACCCTCAACACCAT
CTTCATCCGGGGTCGGCTGCCGCTGTACACCCTGTACAGCAGCACACCTTTCGGCAGCT
GCGGCAGCCGAGCAGCGGCTGCAGCTGCAGCCATGTTAAACCCCTGGGCAACAACAGCCA
TATTTCCCATCACCGGCACCGGGGAGGCTCCTGGACCAGCTGCAGCAGCCCCAGCTCAG
GTACAGGCTGCCGAGCTGTACAGTTAAGGCGCACCATCATCAGCACTCGCATCATCCA
CAGCAGCAGCTGGATATTGAGCCGGATAGACCTATTGGATATGGAGCCTTTGGTGTGTGC
TGGTCAGTAACAGATCCAAGAGATGGAAGAGAGTAGCGCTCAAAAAGATGCCAACGTC
TTCCAGAATCTGGTCTCTTGCAAAGGGTCTTCCGGGAATTGAAGATGTTGTGTTTTTTT
AAGCATGATAATGTAATCTCTGCCCTTGACATACTCCAACCTCCACACATTGACTATTTT
GAAGAAATATATGTTGTACAGAATTGATGCAGAGTGACCTACATAAAAATTATCGTCTCT
CCTCAACCACTCAGCTCAGATCATGTCAAAGTTTTTCTTTATCAGATTTTGCGAGGTTTG
AAATATCTCCATTAGCTGGCATTTTACATCGAGACATTAAGCCAGGGAATCTCCTTGTG
AACAGCAACTGTGTTCTAAAGATTTGTGATTTTGGATTGGCCAGAGTGGAAGAATTAGAT
GAATCCCCTCATATGACTCAGGAAGTTGTTACTCAGTATTATCGGGCTCCAGAAATCCTG
ATGGGCAGCCGTCATTACAGCAATGCTATTGACATCTGGTCTGTGGGATGTATCTTTGCA
GAACTACTAGGACGAAGAATATTGTTTCAGGCACAGAGTCCCATTAGCAGTTGGATTTG
ATCACGGATCTGTTGGGCACACCATCACTGGAAGCAATGAGGACAGCTTGTGAAGGCGCT
AAGGCACATATACTCAGGGGTCCTATAAACAGCCATCTTCTCCTGTACTCTATACCCTG
TCTAGCCAGGCTACACATGAAGCTGTTCACTCCTTTGCAGGATGTTGGTCTTTGATCCA
TCCAAAAGAATATCCGCTAAGGATGCCTTAGCCACCCCTACCTAGATGAAGGGCGACTA
CGATATCACACATGTATGTGTAATGTTGCTTTTCCACCTCCACTGGAAGAGTTTATACC
AGTGACTTTGAGCCTGTACCAATCCCAAATTTGATGACACTTTCGAGAAGAACCCTCAGT
TCTGTCCGACAGGTTAAAGAAATATTTCATCAGTTCATTTTGAACAGCAGAAAGGAAAC
AGAGTGCTCTCTGCATCAACCCCTCAGTCTGCTGCTTTTAAAGAGCTTTATTAGTCCACT
GTTGCTCAGCCATCTGAGATGCCCCATCTCCTCTGGTGTGGGAGTGA

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5' Read Nucleotide Sequence:

>OriGene 5' read for NM_016231 unedited
 GTAGACCTTGATACGACCTCTATAGGGCGGCCGATCCTCGGCACCAGGCTTGACCC
 AGTTTGTCTTCCAATCAAAGGGCATTATTTTGAATGTCTCTTTGTGGCGCAAGAGCCAA
 CGCAAAAATGATGGCGGCTTACAATGGCGGTACATCTGCAGCAGCAGCAGGTCAACACCA
 CCACCATCACCACCACCTCCACACCTCCCTCCTCACCTGCACCACCACCACCACC
 TCAACACCATCTTCATCCGGGGTCCGGCTGCCGTGTACACCCTGTACAGCAGCACACCTC
 TTCGGCAGCTGCGGCAGCCGACGAGCGGCTGCAGCTGCAGCCATGTTAAACCTGGGCA
 ACAACAGCCATATTTCCCATCACCGGCACCGGGCAGGCTCCTGGACCAGCTGCAGCAGC
 CCCAGCTCAGGTACAGGCTGCCGAGCTGCTACAGTTAAGGCGCACCATCATCAGCACTC
 GCATCATCCACAGCAGCAGCTGGATATTGAGCCGGATAGACCTATTGGATATGGAGCCTT
 TGGTGTGTCTGGTCACTAACAGATCCAAGAGATGAAAGAGAGTAGCGCTCAAAAAGAT
 GCCCAACGCTTCCAGAATCTGGTCTCTTGCAAAAGGGTCTTCCGGGAATTGAAGATGTT
 GTGTTTTTTAAGCATGATAATGTACTCTCTGCCCTTGACATACTCCAACCTCCACACAT
 TGACTATTTTGAAGAAATATATGTTGTCACAGAATTGATGCAGAGTGACCTACATAAAAT
 TATCGTCTCCTCAACCACTCAGCTCAGATCATGTCAAGTTTTCTTTATCAGATTTTGC
 GAGGTTTGAAATATCTCCATTCAGCTGGCATTACATCGAGACATTAAGCCAGGGAAATCC
 TCCTTGTGAACAGCAACTGGTGTTC

3' Read Nucleotide Sequence:

>OriGene 3' read for NM_016231 unedited
 CTCCCAGTCTCCGTGGAAGTCACTTACATCTTCGTATTACATTATCTTCCACCATCACT
 CCCACACCAGAGGAGATGGGGGCATCTCAGATGGCTGAGCAACAGTGGAACTAATAAAGC
 TCTTAAAAGCAGCAGACTGAGGGTTGATGCAGAGAGGCACTCTGTTTCCTTTCTGCTGTT
 CCAAAATGAACTGATGAATAATTTCTTTAACCTGTCGGACAGAAGTGAAGTTCTTCTCGA
 AAGTGTCACTAAAATTTGGGATTGGTGACAGGCTCAAAGTCACTGGTATAAACTCTTCCAG
 TGGAGGTGAAAAGCAACATTTACACATACATGTGTGATATCGTAGTCGCCCTTCATCTA
 GGTAGGGTGGGCTAAGGCATCCTTAGCGGATATTCTTTTGGATGGATCAAAGACCAACA
 TCCTGCAAAGGAGATGAACAGCTTCATGTGTAGCCTGGCTAGACAGGGTATAGAGTACAG
 GAAGAGATGGCTGTTTATGAGGACCCCTGAGTATATGTGCCTTAGCGCCTTCACAAGCTG
 TCCTCATTGCTTCCAGTGTGGTGTGCCAACAGATCCGTGATCAAATCCAAGTCTGAA
 TGGGACTCTGTGCCTGAAACAATATTCTCGTCTAGTAGTTCTGCAAAGATACATCCCA
 CAGACCAGATGTCAATAGCATTGCTGTAATGACGGCTGCCATCAGATTTCTGGAGCCCG
 ATAATACTGAGTAACAACCTTCTGAGTCATATGACGGGATTCATCTAATTCTTCCACTCT
 GGCAATCCAAAATCACAAATCTTTAGAACACAGTTGCTGTTACAAGGAGATTCCTCGG
 CTTAATGTCTCGATGAAAATGCCAGCTGATGGAGATTTTCAACCTCGAAAATCTGAT
 AAGAAAACCTTTGACATGATCTGAACTGATGGTTGAGGAGAGACGATTATTTATGGTAG
 GGTACAC

Restriction Sites:

NotI-NotI

ACCN:

NM_016231

Insert Size:

3500 bp

OTI Disclaimer:

Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).

OTI Annotation:

This TrueClone is provided through our Custom Cloning Process that includes sub-cloning into OriGene's pCMV6 vector and full sequencing to provide a non-variant match to the expected reference without frameshifts, and is delivered as lyophilized plasmid DNA.

Components:	The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).
Reconstitution Method:	<ol style="list-style-type: none">1. Centrifuge at 5,000xg for 5min.2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.3. Close the tube and incubate for 10 minutes at room temperature.4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.
RefSeq:	<u>NM_016231.2, NP_057315.2</u>
RefSeq Size:	4061 bp
RefSeq ORF:	3555 bp
Locus ID:	51701
UniProt ID:	<u>Q9UBE8</u>
Cytogenetics:	17q11.2
Domains:	pkinase, TyrKc, S_TKc
Protein Families:	Druggable Genome, Protein Kinase, Transcription Factors
Protein Pathways:	Adherens junction, MAPK signaling pathway, Wnt signaling pathway

Gene Summary:

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. Upon IL1B stimulus, cooperates with ATF5 to activate the transactivation activity of C/EBP subfamily members. Phosphorylates ATF5 but also stabilizes ATF5 protein levels in a kinase-independent manner (PubMed:25512613). [UniProtKB/Swiss-Prot Function]