

## Product datasheet for **RG208723**

### NLK (NM\_016231) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	NLK (NM_016231) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	NLK
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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**ORF Nucleotide Sequence:**

>RG208723 representing NM\_016231  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGGATCGCC**

ATGGCGGCTTACAATGGCGGTACATCTGCAGCAGCAACAGGTACCACCACCACCATACCACCACCTTC  
 CACACCTCCCTCCTCCTCACCTGCACCACCACCACCACCCTCAACACCATCTTCATCCGGGGTCGGCTGC  
 CGCTGTACACCCTGTACAGCAGCACACCTCTTCGGCAGCTGCGGCAGCCGAGCAGCGGGCTGCAGCTGCA  
 GCCATGTTAAACCCTGGGCAACAACAGCCATATTTCCCATCACCGGCACCGGGGAGGCTCCTGGACCAG  
 CTGCAGCAGCCCCAGCTCAGGTACAGGCTGCCGAGCTGTACAGTTAAGGCGCACCATCATCAGCACTC  
 GCATCATCCACAGCAGCAGCTGGATATTGAGCCGGATAGACCTATTGGATATGGAGCCTTTGGTGTGTC  
 TGGTCAGTAACAGATCCAAGAGATGAAAGAGAGTAGCGCTCAAAAAGATGCCAACGTCTCCAGAATC  
 TGGTCTCTTGAAAAGGGTCTTCCGGGAATTGAAGATGTTGTGTTTTTTAAGCATGATAATGACTCTC  
 TGCCCTTGACATACTCCAACCTCCACACATTGACTATTTGAAGAAATATATGTTGTACAGAATTGATG  
 CAGAGTGACCTACATAAAATTATCGTCTCTCCTCAACCACTCAGCTCAGATCATGTCAAAGTTTTCTTT  
 ATCAGATTTTGGCAGGTTTGAATATCTCCATTAGCTGGCATTTTACATCGAGACATTAAGCCAGGGAA  
 TCTCCTTGTAACAGCAACTGTGTTCTAAAGATTTGTGATTTTGGATTGGCCAGAGTGGAAGAATTAGAT  
 GAATCCCGTCATATGACTCAGGAAGTTGTTACTCAGTATTATCGGGCTCCAGAAATCCTGATGGGCAGCC  
 GTCATTACAGCAATGCTATTGACATCTGGTCTGTGGGATGTATCTTTGCAGAACTACTAGGACGAAGAAT  
 ATGTTTCAGGCACAGAGTCCCATTACAGAGTTGGATTTGATCACGGATCTGTTGGGCACACCATCACTG  
 GAAGCAATGAGGACAGCTTGTGAAGCGCTAAGGCACATATACTCAGGGGTCCTATAAACAGCCATCTC  
 TTCTGTACTCTATACCCTGTCTAGCCAGGCTACACATGAAGCTGTTTCATCTCTTTGCAGGATGTTGGT  
 CTTTGATCCATCCAAAAGAATATCCGCTAAGGATGCCTTAGCCACCCCTACCTAGATGAAGGGCGACTA  
 CGATATCACACATGTATGTGTAATGTTGCTTTTCCACCTCCACTGGAAGAGTTTATACCAGTGACTTTG  
 AGCCTGTCACCAATCCCAAATTTGATGACACTTTCGAGAAGAACCTCAGTTCTGTCCGACAGGTTAAAGA  
 AATTATTCATCAGTTCATTTTGGAAACAGCAGAAAGGAAACAGAGTGCCTCTCTGCATCAACCCTCAGTCT  
 GCTGCTTTAAGAGCTTTATTAGTTCCTGTTGCTCAGCCATCTGAGATGCCCCATCTCCTCTGGTGT  
 GGGAG

**ACGCGTACGCGGCCGCTCGAG** - GFP Tag - GTTTAA

**Protein Sequence:**

>RG208723 representing NM\_016231  
 Red=Cloning site Green=Tags(s)

MAAYNGGTSAAATGHHHHHHHHLPHLPPPHLHHHHHPQHHLHPGSAAAVHPVQQTSSAAAAAAAAAAAA  
 AMLNPGQQQPYFSPAPGQAPGPAAPAAQVQAAAAATVKAHHHQHSHHPQQQLDIEPDRPIGYGAFGVV  
 WSVTDPRDGKRVALKKMPNVFQNLVSKRVFRELKMLCFKHDNVLSALDILQPPHIDYFEEIYVTELM  
 QSDLHKIIVSPQPLSSDHVKVFLYQILRGLKYLHSAGILHRDIKPGNLLVNSNCVLKICDFGLARVEELD  
 ESRHMTQEYVVTQYRAPEILMGRHYSNAIDIWSVGCIFAE LLGRRILFQAQSPIQQLDLITDLLGTPSL  
 EAMRTACEGAKAHILRPHKQPSLPVLYTLSSQATHEAVHLLCRMLVFDPSKRISAKDALAHPYLDEGRL  
 RYHTCMCKCCFSTSTGRVYTSDFEPVTNPKFDDTFEKNLSSVRQVKEIIHQFILEQQKGNRVPCLINPQS  
 AAFKSFISSTVAQPSEMPPSPLVWE

**TRTRPLE** - GFP Tag - V

**Restriction Sites:**

Sgfl-MluI

**Cloning Scheme:**


**ACCN:** NM\_016231

**ORF Size:** 1545 bp

**OTI Disclaimer:** The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. [More info](#)

**OTI Annotation:** This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

**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:**

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:** [NM\\_016231.3](#)

**RefSeq Size:** 3555 bp

**RefSeq ORF:** 1584 bp

**Locus ID:** 51701

**UniProt ID:** [Q9UBE8](#)

**Cytogenetics:** 17q11.2

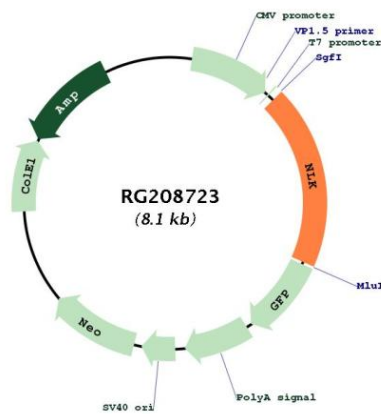
**Domains:** pkinase, TyrKc, S\_TKc

**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]

**Product images:**



Circular map for RG208723