Human nemo-like kinase / NLK Protein (His & GST Tag)

Catalog Number: **11573-H20B**

Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

NLK

Protein Construction:

A DNA sequence encoding the human NLK (Q9UBE8) (Val121-Glu527) was fused with the N-terminal polyhistidine-tagged GST tag at the N-terminus.

Source: Human

Expression Host: Baculovirus-Insect Cells

QC Testing

Purity: > 91 % as determined by SDS-PAGE

Bio Activity:

The specific activity was determined to be 3 nmol/min/mg using MBP as substrate.

Endotoxin:

< 1.0 EU per μg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 ℃

Predicted N terminal: Met

Molecular Mass:

The recombinant human NLK /GST chimera consists of 644 amino acids and has a calculated molecular mass of 74.1 kDa. The recombinant protein migrates as an approximately 73 kDa band in SDS-PAGE under reducing conditions.

Formulation:

Supplied as sterile 20mM Tris, 500mM NaCl, pH 8.0, 10% gly

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

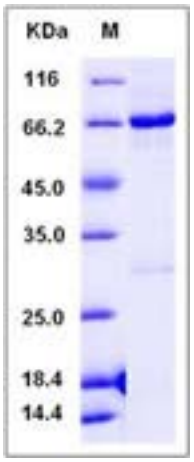
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Nemo-like kinase contains 1 protein kinase domain and belongs to the protein kinase superfamily, CMGC Ser/Thr protein kinase family and MAP kinase subfamily. It also contains a TQE activation loop motif in which autophosphorylation of the threonine residue (Thr-298) is sufficient for kinase activation. As a serine/threonine-protein kinase, nemo-like kinase regulates a number of transcription factors with key roles in cell fate determination. It is a 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). Nemo-like kinase also is a negative regulator of the canonical Wnt/beta-catenin signaling pathway.

References

1.Smit L, *et al.* (2004) Wnt activates the Tak1/Nemo-like kinase pathway. J Biol Chem. 279(17): 17232-40. 2.Yasuda J, *et al.* (2004) Nemo-like kinase suppresses a wide range of transcription factors, including nuclear factor-kappaB. Cancer Sci. 95(1):52-7. 3.Yasuda J, *et al.* (2003) Nemo-like kinase induces apoptosis in DLD-1 human colon cancer cells. Biochem Biophys Res Commun. 308(2):227-335.