



# Recombinant Protein Technical Manual

**Recombinant Human NLK Protein (His & GST Tag)(Active)**  
RPES2704

## Product Data:

**Product SKU:** RPES2704

**Size:** 20µg

**Species:** Human

**Expression host:** Baculovirus-Insect Cells

**Uniprot:** Q9UBE8

## Protein Information:

**Molecular Mass:** 74.1 kDa

**AP Molecular Mass:** 73 kDa

**Tag:** N-His & GST

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

**Purity:** > 91 % as determined by reducing SDS-PAGE.

**Endotoxin:** < 1.0 EU per µg as determined by the LAL method.

**Storage:** Store at < -20°C, stable for 6 months. Please minimize freeze-thaw cycles.

**Shipping:** This product is provided as liquid. It is shipped at frozen temperature with blue ice/gel packs. Upon receipt, store it immediately at < -20°C.

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

**Reconstitution:** Please refer to the printed manual for detailed information.

**Application:**

**Synonyms:** LAK1;NLK

## Immunogen Information:

**Sequence:** Val121-Glu 527

## Background:

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.