

## NLK/Nemo Like Kinase Protein, Human (sf9, His-GST)

Cat. No.:	HY-P76517
Synonyms:	Serine/threonine-protein kinase NLK; Nemo-like kinase; NLK
Species:	Human
Source:	Sf9 insect cells
Accession:	A0A024QZ12 (V121-E527)
Gene ID:	51701
Molecular Weight:	Approximately 73 kDa.

### PROPERTIES

Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Solution.
Formulation	Supplied as a 0.2 µm filtered solution of 20 mM Tris, 500 mM NaCl, pH 8.0, 10% gly.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	N/A.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice.

### DESCRIPTION

#### Background

NLK/Nemo Like Kinase Protein, a serine/threonine-protein kinase, plays a crucial role in cell fate determination by regulating various transcription factors. As a positive effector of the non-canonical Wnt signaling pathway, NLK acts downstream of WNT5A, MAP3K7/TAK1, and HIPK2. Simultaneously, it serves as a negative regulator of the canonical Wnt/beta-catenin signaling pathway by binding to and phosphorylating TCF7L2/TCF4 and LEF1, leading to the dissociation of the TCF7L2/LEF1/beta-catenin complex from DNA and the subsequent ubiquitination and proteolysis of LEF1. NLK also negatively modulates the Notch signaling pathway by phosphorylating NOTCH1, preventing the formation of a transcriptionally active ternary complex. Moreover, NLK inhibits the MYB family of transcription factors through phosphorylation, which leads to their proteolysis or interaction inhibition with the coactivator CREBBP. Additionally, NLK phosphorylates STAT3 downstream of IL6 and MAP3K7/TAK1, cooperates with ATF5 to activate C/EBP subfamily members upon IL1B stimulus, and acts as an inhibitor of the mTORC1 complex in response to osmotic stress by phosphorylating RPTOR.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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