

NEK7 Protein, Human (sf9, His-GST)

Cat. No.:	HY-P75935
Synonyms:	Serine/threonine-protein kinase Nek7; NimA-related protein kinase 7; NEK7
Species:	Human
Source:	Sf9 insect cells
Accession:	Q8TDX7 (M1-S302)
Gene ID:	140609
Molecular Weight:	Approximately 58 kDa

PROPERTIES

Biological Activity	No Kinase Activity.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of 50 mM Tris, 100 mM NaCl, pH 8.5, 0.5 mM Reduced Glutathione, 0.5 mM PMSF. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

NEK7 protein, a pivotal kinase, plays a crucial role in mitotic cell cycle progression by contributing to the microtubule nucleation activity of the centrosome, ensuring robust mitotic spindle formation, and facilitating cytokinesis. Its diverse functions include the phosphorylation of EML4 at 'Ser-146,' promoting dissociation from microtubules during mitosis and thereby facilitating efficient chromosome congression. NEK7 extends its impact beyond mitotic events by phosphorylating RPS6KB1 and serving as an essential activator of the NLRP3 inflammasome assembly. Independently of its kinase activity, NEK7 unlocks NLRP3 within the microtubule organizing center, promoting the formation of the NLRP3:PYCARD complex and activation of CASP1. Notably, NEK7 acts as a cellular switch, ensuring mutual exclusivity between the inflammasome response and cell division; its interaction with NEK9 prevents interaction with NLRP3 and inflammasome activation during mitosis. These multifaceted functions position NEK7 as a key orchestrator in both mitotic progression and the inflammasome response, highlighting its regulatory significance in diverse cellular processes.

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

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