

## CDK9-CCNK Heterodimer Protein, Human (Sf9, GST, FLAG)

<b>Cat. No.:</b>	HY-P701375
<b>Synonyms:</b>	CDK9; CCNK; Cyclin-dependent kinase 9; C-2K; Cell division cycle 2-like protein kinase 4; Cell division protein kinase 9; Serine/threonine-protein kinase PITALRE; Tat-associated kinase complex catalytic subunit; Cyclin-K
<b>Species:</b>	Human
<b>Source:</b>	Sf9 insect cells
<b>Accession:</b>	P50750-1 (M1-F372)&O75909-1 (M1-S300)
<b>Gene ID:</b>	1025&8812
<b>Molecular Weight:</b>	69.3 kDa&36.9 kDa

### PROPERTIES

<b>Biological Activity</b>	The activity was measured by off-chip mobility shift assay(MSA). The enzyme was incubated with fluorescence-labeled substrate and Mg(or Mn)/ATP. The phosphorylated and unphosphorylated substrates were separated and detected by MSA device. The Km of CDK9-CCNK for its substrate is 88 $\mu$ M.
<b>Appearance</b>	Solution.
<b>Formulation</b>	Supplied as a 0.2 $\mu$ m filtered solution of 20 mM HEPES (pH 7.5), 200 mM NaCl, 5% glycerol, 1 mM DTT.
<b>Endotoxin Level</b>	<1 EU/ $\mu$ g, determined by LAL method.
<b>Reconstitution</b>	Please use rapid thawing with running water to thaw the protein.
<b>Storage &amp; Stability</b>	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.
<b>Shipping</b>	Shipping with dry ice.

### DESCRIPTION

<b>Background</b>	The CDK9ic protein emerges as a central player in the intricate regulation of transcription, orchestrating a diverse range of cellular processes. As a pivotal member of the cyclin-dependent kinase pair (CDK9/cyclin-T) complex, also known as positive transcription elongation factor b (P-TEFb), it facilitates the transition from abortive to productive elongation by phosphorylating the C-terminal domain (CTD) of the large subunit of RNA polymerase II (POLR2A), SUPT5H, and RDBP. This complex, inactive in the 7SK small nuclear ribonucleoprotein (snRNP) complex form, engages in phosphorylation events targeting EP300, MYOD1, RPB1/POLR2A, AR, and the negative elongation factors DSIF and NELFE. Beyond its role in transcription, CDK9-CCNK regulates cytokine-inducible transcription networks, promoting RNA synthesis in genetic programs for cell growth, differentiation, and viral pathogenesis. The complex also plays a critical role in cotranscriptional histone modification, mRNA processing, mRNA export, and a network of chromatin modifications. Moreover, it contributes to genome integrity maintenance, replication stress response, and cardiac myocyte enlargement. The multifaceted activities of CDK9-CCNK underscore its significance in governing diverse cellular functions and molecular pathways.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA