

Bioactive

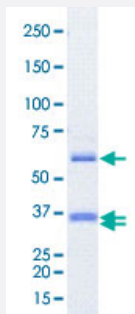
Full-Length

CDK7/CCNH/MNAT1 (Human) Recombinant Protein

Catalog # P5516

Size 5 ug

Applications



Result of activity analysis

Result of activity analysis

□

Specification

Product Description	Human CDK7 (NP_001790.1, 1 a.a. - 346 a.a.) and CCNH (NP_001230.1, 1 a.a. - 323 a.a.) and MNAT1 (NP_002422.1, 1 a.a. - 309 a.a.) full-length recombinant protein with GST tag expressed in baculovirus infected Sf21 cells.
Host	insect
Theoretical MW (kDa)	66
Form	Liquid
Preparation Method	Baculovirus infected insect cell (Sf21) expression system
Purification	Glutathione sepharose chromatography

Purity	99 % by SDS-PAGE/CBB staining
Activity	The activity was measured by off-chip mobility shift assay. The enzyme was incubated with fluorescence-labeled substrate and Mg(or Mn)/ATP. The phosphorylated and unphosphorylated substrates were separated and detected by LabChip 3000. Substrate: CTD3 peptide. ATP: 100 uM.
Quality Control Testing	Loading 1 ug protein in SDS-PAGE
Storage Buffer	In 50 mM Tris-HCl, 150 mM NaCl, pH 7.5 (0.1% CHAPS, 1 mM DTT, 10% glycerol)
Storage Instruction	Store at -80°C. Aliquot to avoid repeated freezing and thawing.
Note	Result of activity analysis Result of activity analysis

Applications

- Functional Study
- SDS-PAGE

Gene Info — CCNH

Entrez GeneID	902
Protein Accession#	NP_001790.1 (Gene ID : 1022);NP_001230.1 (Gene ID : 902);NP_002422.1 (Gene ID : 4331)
Gene Name	CCNH
Gene Alias	CAK, p34, p37
Gene Description	cyclin H
Omim ID	601953
Gene Ontology	Hyperlink

Gene Summary

The protein encoded by this gene belongs to the highly conserved cyclin family, whose members are characterized by a dramatic periodicity in protein abundance through the cell cycle. Cyclins function as regulators of CDK kinases. Different cyclins exhibit distinct expression and degradation patterns which contribute to the temporal coordination of each mitotic event. This cyclin forms a complex with CDK7 kinase and ring finger protein MAT1. The kinase complex is able to phosphorylate CDK2 and CDC2 kinases, thus functions as a CDK-activating kinase (CAK). This cyclin and its kinase partner are components of TFIIH, as well as RNA polymerase II protein complexes. They participate in two different transcriptional regulation processes, suggesting an important link between basal transcription control and the cell cycle machinery. [provided by RefSeq]

Other Designations

CDK-activating kinase|MO15-associated protein|cyclin-dependent kinase-activating kinase

Gene Info — CDK7

Entrez GeneID

[1022](#)

Protein Accession#

[NP_001790.1 \(Gene ID : 1022\);NP_001230.1 \(Gene ID : 902\);NP_002422.1 \(Gene ID : 4331\)](#)

Gene Name

CDK7

Gene Alias

CAK1, CDKN7, MO15, STK1, p39MO15

Gene Description

cyclin-dependent kinase 7

Omim ID

[601955](#)

Gene Ontology

[Hyperlink](#)

Gene Summary

The protein encoded by this gene is a member of the cyclin-dependent protein kinase (CDK) family. CDK family members are highly similar to the gene products of *Saccharomyces cerevisiae* cdc28, and *Schizosaccharomyces pombe* cdc2, and are known to be important regulators of cell cycle progression. This protein forms a trimeric complex with cyclin H and MAT1, which functions as a Cdk-activating kinase (CAK). It is an essential component of the transcription factor TFIIH, that is involved in transcription initiation and DNA repair. This protein is thought to serve as a direct link between the regulation of transcription and the cell cycle. [provided by RefSeq]

Other Designations

39 KDa protein kinase|Cdk-activating kinase|cell division protein kinase 7|cyclin-dependent kinase 7 (MO15 homolog, *Xenopus laevis*, cdk-activating kinase)|homolog of *Xenopus* MO15 Cdk-activating kinase|kinase subunit of CAK|serine/threonine kinase stk1|ser

Gene Info — MNAT1

Entrez GeneID

[4331](#)

Protein Accession#

[NP_001790.1 \(Gene ID : 1022\);NP_001230.1 \(Gene ID : 902\);NP_002422.1 \(Gene ID : 4331\)](#)

Gene Name

MNAT1

Gene Alias	MAT1, RNF66, TFB3
Gene Description	menage a trois homolog 1, cyclin H assembly factor (Xenopus laevis)
Omim ID	602659
Gene Ontology	Hyperlink
Gene Summary	Cyclin-dependent kinases (CDKs), which play an essential role in cell cycle control of eukaryotic cells, are phosphorylated and thus activated by the CDK-activating kinase (CAK). CAK is a multisubunit protein that includes CDK7 (MIM 601955), cyclin H (CCNH; MIM 601953), and MAT1. MAT1 (for 'menage a trois-1') is involved in the assembly of the CAK complex.[supplied by OMIM]
Other Designations	cyclin G1 interacting protein cyclin H assembly factor menage a trois 1 (CAK assembly factor)

Pathway

- [Cell cycle](#)
- [Cell cycle](#)
- [Nucleotide excision repair](#)
- [Nucleotide excision repair](#)
- [Nucleotide excision repair](#)

Disease

- [Adenocarcinoma](#)
- [Adenoma](#)
- [Ataxia telangiectasia](#)
- [Ataxia telangiectasia](#)
- [Biliary Tract Neoplasms](#)
- [Brain Neoplasms](#)
- [Carcinoma](#)
- [Carcinoma](#)
- [Colonic Neoplasms](#)

- [Colorectal Neoplasms](#)
- [Colorectal Neoplasms](#)
- [Esophageal Neoplasms](#)
- [Esophageal Neoplasms](#)
- [Genetic Predisposition to Disease](#)
- [Genetic Predisposition to Disease](#)
- [Genetic Predisposition to Disease](#)
- [Glioma](#)
- [Head and Neck Neoplasms](#)
- [Kidney Failure](#)
- [Kidney Failure](#)
- [Leukemia](#)
- [Lung Neoplasms](#)
- [Lung Neoplasms](#)
- [Lung Neoplasms](#)
- [Meningioma](#)
- [Mouth Neoplasms](#)
- [Multiple Sclerosis](#)
- [Multiple Sclerosis](#)
- [Multiple Sclerosis](#)
- [Neoplasm Invasiveness](#)
- [Neoplasms](#)
- [Neoplasms](#)
- [Neuroma](#)
- [Ovarian cancer](#)
- [Ovarian Neoplasms](#)

- [Precancerous Conditions](#)
- [Pulmonary Disease](#)
- [Pulmonary Disease](#)
- [Rectal Neoplasms](#)
- [Recurrence](#)
- [Tobacco Use Disorder](#)
- [Urinary Bladder Neoplasms](#)
- [Urinary Bladder Neoplasms](#)
- [Werner syndrome](#)
- [Werner syndrome](#)