

ProQinase™ CDK9/CycT2 cyclin dependent kinase 9 / Cyclin T2

Recombinant Human Active Protein Kinase

HGNC Symbol: CDK9

Synonyms: C-2k; CDC2L4; PITALRE; TAK; CDC2-related kinase

Product No.: 0371-2124-1

Lot: 001

Description: Human CDK9, full length, amino acids M₁-F₃₇₂ (as in [NCBI/Protein](#) entry NP_001252.1), N-terminal GST-HIS₆ fusion protein with a Thrombin cleavage site, and human CycT2, full length, amino acids M₁-S₆₆₃ (as in [NCBI/Protein](#) entry NP_001232.1), N-terminal HIS₆ fusion protein with a 3C cleavage site, coexpressed in Sf9 insect cells

Product identity: CDK9/CycT2, has been verified by mass spectrometry LC-ESI-MS/MS

Theoretical MW_{GST-CDK9}: 72173 Da
Theoretical MW_{GST-CycT2}: 101771 Da

Expression host: Sf9 insect cells

Purification: GST-Affinity Chromatography

Activation: This kinase was not activated by special procedures

Storage buffer: 50 mM HEPES pH 7.5, 100 mM NaCl, 5 mM DTT, 15 mM reduced glutathione, 20 % glycerol

Storage temperature: -80°C

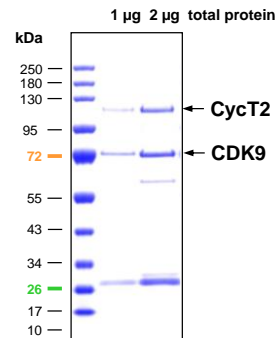
For complete recovery, mix well and spin before use. Product must not be stored in diluted solutions, aliquots below 10µl are not advisable. Avoid repeated freeze-thaw cycles!

Protein concentration: 0.488 µg/µl
(Bradford method using BSA [Sigma, cat# A-7638, Lot 79H7641] as standard protein)

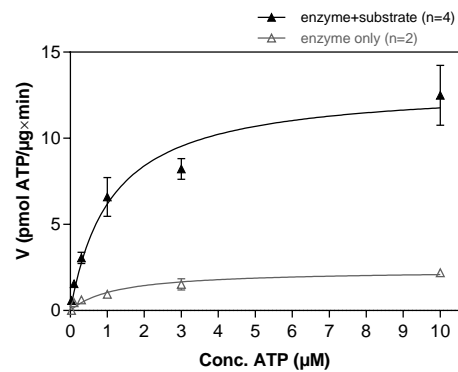
Biochemical Parameters:

Specific kinase activity (P_i transfer): 13 pmol/µg*min
ATP-K_M: 1.1 µM

**CDK9/CycT2 Lot001:
Coomassie stain**



**CDK9/CycT2 Lot001:
Determination of V_{max} and K_M value for ATP**



- Assay conditions:
 - 60 mM HEPES-NaOH, pH 7.5
 - 3 mM MgCl₂
 - 3 mM MnCl₂
 - 3 µM Na-orthovanadate
 - 1.2 mM DTT
 - 50 µg/ml PEG_{20,000}
 - ATP (variable)
 - Substrate: SUPT5H 80 µg/ml
 - Kinase: 0.8 µg/ml

Assay technology:
Radiometric filter binding assay
MSFC membrane (96 well plate, Millipore)

Sequence information

GST-CDK9 Recombinant Fusion Protein Amino Acid Sequence							
1	MSPILGYWKI	KGLVQPTRL	LEYLEEKYEE	HLYERDEGDK	WRNKKFELGL	EFPNLPYYID	60
61	GDVKLTQSMA	IIRYIADKHN	MLGGCPKERA	EISMLEGAVL	DIRYGVSRIA	YSKDFETLKV	120
121	DFLSKLPPEML	KMFEDRLCHK	TYLNGDHVTH	PDFMLYDALD	VVLYMDPMCL	DAFPKLVCFK	180
181	KRIEAIPOID	KYLKSSKYIA	WPLQGWQATF	GGGDHPPKSD	PMGHHHHHGG	RRRASVAAGI	240
241	LVPRGSPGLD	GICSRMAKQY	DSVECPFCDE	VSKYEKLAKI	GQGTFGVEFK	ARHRKTGQKV	300
301	ALKKVMENE	KEGFPITALR	EIKILQLLKH	ENVVNLIEIC	RTKASPYNRC	KGSIYLVDFD	360
361	CEHDLAGLLS	NVLVKFTLSE	IKRVMQMLLN	GLYYIHRNKI	LHRDMKAANV	LITRDGVLKL	420
421	ADFLARAFS	LAKNSQPNRY	TNRVTLWYR	PPELLLGERD	YGPPIDLWGA	GCIMAEMWTR	480
481	SPIMQGNTEQ	HQLALISQLC	GSITPEVWPN	VDNYELYEKL	ELVKGQKRKV	KDRLKAYVRD	540
541	PYALDLIDKL	LVLDPAQRID	SDDALNHDFD	WSDPMPSDLK	GMLSTHLTSM	FEYLAPPRRK	600
601	GSQITQOSTN	QSRNPATTNQ	TEFERVF				660

1-218: GST Red: HIS6-tag Pink: Thrombin cleavage site blue: CDK9

CDK9 wt ¹ Amino Acid Sequence							
1	MAKQYDSVEC	PFCDEVSKYE	KLAKIGQGTG	GEVFKARHRK	TGQKVALKKV	LMENEKEGFP	60
61	ITALREIKIL	QLLKHENVVN	LIEICRTKAS	PYNRCKGSIY	LVDFCEHDL	AGLLSNVLVK	120
121	FTLSEIKRVM	QMLLNGLYYI	HRNKILHRDM	KAANVLITRD	GVLKLADFGI	ARAFSLAKNS	180
181	QPNRYTNRVV	TLWYRPPPELL	IGERDYGPPI	DLWGAGCIMA	EMWTRSPIMQ	GNTEQHQLAL	240
241	ISQLCGSITP	EVWPNVDNVE	LYEKLELVKG	QKRKVKDRLK	AYVRDPYALD	LIDKLLVLDP	300
301	AQRIDSDDAL	NHDFFWSDPM	PSDLKGMMLST	HLTSMFEYLA	PPRRKGSQIT	QQSTNQSRNP	360
361	ATTNQTEFER	VF					420

blue: CDK9 sequence expressed in recombinant protein

¹[NCBI/Protein](https://www.ncbi.nlm.nih.gov/Protein) accession number NP_001252.1

GST-CycT2 Recombinant Fusion Protein Amino Acid Sequence

1	MSPILGYWKI	KGLVQPTRLL	LEYLEEKYEE	HLYERDEGDK	WRNKKFELGL	EFPNLPYYID	60
61	GDVKLTQSMA	IIRYIADKHN	MLGGCPKERA	EISMLEGAVL	DIRYGVSRIA	YSKDFETLKV	120
121	DFLSKLPPEML	KMFKDRLCHK	TYLNGDHVTH	PDFMLYDALD	VVLYMDPMCL	DAFPKLVCFK	180
181	KRIEAIPOID	KYLKSSKYIA	WPLQGQWQATF	GGGDHPPKSD	PMGHHHHHGG	RDSLEVLFGG	240
241	MASGRGASS	RWFFTREQLE	NTPSRRCGVE	ADKELSCRQQ	AANLIQEMGQ	RLNVSQLTIN	300
301	TAIVYMHRFY	MHSFTKFNK	NIISSTALFL	AAKVEEQARK	LEHVIKVAHA	CLHLEPLLD	360
361	TKCDAYLQQT	QELVILETIM	LQTLGFEITI	EHPHTDVVKC	TQLVRASKDL	AQTSYFMATN	420
421	SLHLTTFCLO	YKPTVIACVC	IHLACKWSNW	EIPVSTDGKH	WWEYVDPTVT	LELLDELTHE	480
481	FLQILEKTPN	RLKKIRNWR	NQAARKPKVD	QOVSETPLL	SSLVQNSILV	DSVTGVP TNP	540
541	SFQKPSTSAF	PAPVPLNSGN	ISVQDSHTSD	NLSMLATGMP	STSYGLSSHQ	EWPHQDSAR	600
601	TEQLYSQKQE	TSLSGSQYNI	NFQQGPSISL	HSGLHHRPDK	ISDHSSVKQE	YTHKAGSSKH	660
661	HGPISTTPGI	IPQKMSLDKY	REKRKLETL	LDVRDHYIAA	VEQQHKQGS	QAASSSSVT	720
721	PIKMKIPIA	TEKYMADKK	EKSGSLKLR	PIPPTDKSAS	KEELKMKIKV	SSSERHSSSD	780
781	EGSGSKHSS	PHISRDKHEK	HKEHPSSRHH	TSSHKHSHSH	SGSSGGGSKH	SADGIPPTVL	840
841	RSPVGLSSDG	ISSSSSSSRK	RLHVNDASHN	HHSKMSKSSK	SSGGLRTSQH	PRETGQEASG	900
901	DQRS						960

1-218: GST **Red:** HIS6-tag **Green:** 3C cleavage site **blue:** CycT2

CycT2 wt² Amino Acid Sequence

1	MASGRGASSR	WFFTREQLEN	TPSRRCGVEA	DKELSCRQQA	ANLIQEMGQR	LNVSQLTINT	60
61	AIVYMHRFYM	HHSFTKFNKN	IISSTALFLA	AKVEEQARKL	EHVIKVAHAC	LHLEPLLD	120
121	KCDAYLQQTQ	ELVILETIML	QTLGFEITIE	HPHTDVVKCT	QLVRASKDLA	QTSYFMATNS	180
181	LHLTTFCLOQ	KPTVIACVCI	HLACKWSNWE	IPVSTDGKHW	WEYVDPTVTL	ELLDELTHEF	240
241	LQILEKTPNR	LKKIRNWRAN	QAARKPKVDG	QVSETPLLGS	SLVQNSILVD	SVTGVP TNS	300
301	FQKPSTSAFP	APVPLNSGNI	SVQDSHTSDN	LSMLATGMPS	TSYGLSSHQE	WPQHQSART	360
361	EQLYSQKQET	SLSGSQYNIN	FQQGPSISLH	SGLHHRPDKI	SDHSSVKQEY	THKAGSSKHH	420
421	GPISTTPGII	PQKMSLDKYR	EKRKLETL	DVRDHYIAAQ	VEQQHKQGS	QAASSSSVTS	480
481	PIKMKIPIAN	TEKYMADKKE	KSGSLKLRIP	IPPTDKSASK	EELKMKIKVS	SSSERHSSSDE	540
541	GSGKSKHSSP	HISRDKHEKH	KEHPSSRHHT	SSHKHSHSHS	GSSSGGSKHS	ADGIPPTVLR	600
601	SPVGLSSDGI	SSSSSSSRKR	LHVNDASHNH	HSKMSKSSKS	SGGLRTSQHP	RETGQEASGD	660
661	QRS						720

blue: CycT2 sequence expressed in recombinant protein

²[NCBI/Protein](#) accession number NP_001232.1
[HGNC](#) identifier CycT2: CCNT2