

ProQinase™ CDK2/CycD1 cyclin dependent kinase 2

Recombinant Human Active Protein Kinase

HGNC Symbol: CDK2

Synonyms: p33

Product No.: 0050-0143-1

Lot: 014

Description: Human CDK2, full length, amino acids M₁-L₂₉₈ (as in [NCBI/Protein](#) entry NP_001789.2), and human CycD1, amino acids Q4-I295 (as in [NCBI/Protein](#) entry NP_444284.1), both N-terminal GST fusion proteins with a Thrombin cleavage site, co-expressed in Sf9 insect cells

Product identity: CDK2/CycD1 Lot 014, was confirmed as CDK2/CycD1 by mass spectroscopy LC-ESI-MS/MS

Theoretical MW_{GST-CDK2}: 60,222 Da

Theoretical MW_{GST-CycD1}: 59,995 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: 0.431 µg/µl

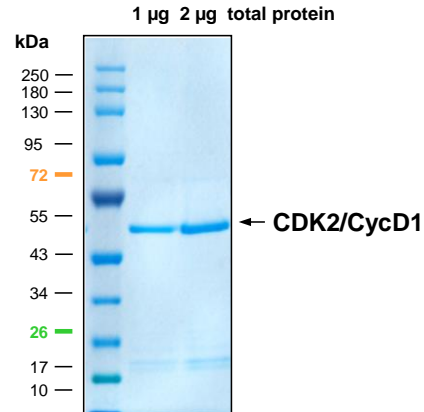
(Bradford method using BSA [Sigma, cat# A-7638, Lot 79H7641] as standard protein)

Biochemical Parameters:

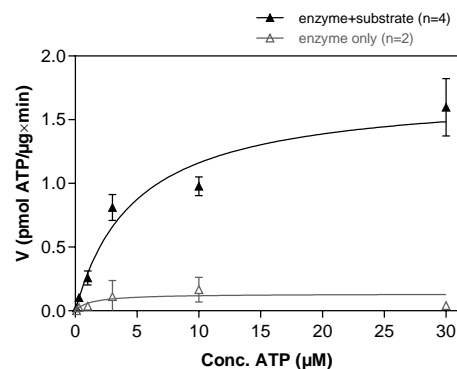
Specific kinase activity (P_i transfer): 1.7 pmol/µg x min

ATP-K_M: 4.9 µM

CDK2/CycD1 Lot 014: Coomassie stain



CDK2/CycD1 Lot 014: 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: RBER-CHKtide 100 µg/ml
 - Kinase: 5 µg/ml
- Filter binding assay
MSFC membrane (Millipore)

Recombinant Proteins

Sequence information

GST-CDK2 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	LVPRGSMENF	QKVEKIGEGT	240
241	YGVVYKARNK	LTGEVVALKK	IRLDTETEGV	PSTAIREISL	LKELNHPNIV	KLLDVIHTEN	300
301	KLYLVFEFLH	QDLKKFMDAS	ALTGIPLPLI	KSYLFQLLQG	LAFCHSHRVL	HRDLKPQNLL	360
361	INTEGAIKLA	DFGLARAFGV	PVRTYTHEVV	TLWYRAPEIL	LGCKYYSTAV	DIWSLGCIFA	420
421	EMVTRRALFP	GDSEIDQLFR	IFRTLGTPE	VVWPGVTSMP	DYKPSFPKWA	RQDFSKVPPP	480
481	LDEDGRSLLS	QMLHYDPNKR	ISAKAALAH	FFQDVTKVPV	HLRL		540

1-218: GST **Pink**: Thrombin cleavage site **blue**: CDK2

CDK2 wt ¹ Amino Acid Sequence							
1	MENFQVEKI	GEGTYGVVYK	ARNKLTGEVV	ALKKIRLDT	TEGVPSTAIR	EISLLKELNH	60
61	PNIVKLLDVI	HTENKLYLVF	EFLHQDLKKE	MDASALTGIP	LPLIKSYLFQ	LLQGLAFCHS	120
121	HRVLHRDLKP	QNLLINTEGA	IKLADFGLAR	AFGVPVRTYT	HEVVTLWYRA	PEILLGCKYY	180
181	STAVDIWSLG	CIFAEMVTRR	ALFPGDSEID	QLFRIFRTL	TPDEVVWPGV	TSMPDYKPSF	240
241	PKWARQDFSK	VVPLDEDGR	SLLSQMLHYD	PNKRISAKAA	LAHPFFQDVT	KVPVHLRL	300

blue: CDK2 sequence expressed in recombinant protein

¹[NCBI/Protein](#) accession number NP_001789.2

GST-CycD1 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	LVPRGSAWIQ	LLCCEVETIR	240
241	RAYPDANLLN	DRVLRAMLKA	EETCAPSVSY	FKCVQKEVLP	SMRKIVATWM	LEVCEEQKCE	300
301	EEVFPLAMNY	LDRFLSLEPV	KKSRLQLLGA	TCMFVASKMK	ETIPLTAEKL	CIYTDNSIRP	360
361	EELLQMEPLL	VNKLKWNLA	MTPHDFIEHF	LSKMPEAEEN	KQIRKHAQT	FVALCATDVK	420
421	FISNPPSMVA	AGSVAAVQG	LNLRSNNFL	SYRLTRFLS	RVIKCDPDCL	RACQEQIEAL	480
481	LESSLRQAQQ	NMDPKAAEEE	EEEEEEVDLA	CTPTDVRDVD	I		540

1-218: GST **Pink**: Thrombin cleavage site **blue**: CycD1

CycD1 wt ² Amino Acid Sequence							
1	MEHQLLCCEV	ETIRRAYPDA	NLLNDRVLR	MLKAEETCAP	SVSYFKCVQK	EVLPSMRKIV	60
61	ATWMLEVCEE	QKCEEEVFPL	AMNYLDRFLS	LEPVKKSRLQ	LLGATCMFVA	SKMKETIPLT	120
121	AEKLCIYTDN	SIRPEELLQM	ELLLVNKLKW	NLAAMTPHDF	IEHFLSKMPE	AEENKQIIRK	180
181	HAQTFVALCA	TDRFISNPP	SMVAAGSVVA	AVQGLNLRSP	NNFLSYRLT	RFLSRVIKCD	240
241	PDCLRACQEQ	IEALLESSLR	QAQONMDPKA	AEEEEEEEEE	VDLACTPTDV	RDVDI	300

blue: kinase sequence expressed in recombinant protein **Red**: variant in recombinant protein

²[NCBI/Protein](#) accession number NP_444284.1

[HGNC](#) identifier CycD1: CCND1