

ProQinase™ CDK2/CycA1

cyclin dependent kinase 2

Recombinant Human Active Protein Kinase

HGNC Symbol: CDK2

Synonyms: p33

Product No.: 0050-2122-1

Lot: 001

Description: Human CDK2, full length, amino acids M₁-L₂₉₈ (as in [NCBI/Protein](#) entry NP_001789.2), N-terminal GST-HIS₆ fusion protein with a Thrombin cleavage site, and human CycA1, full length, amino acids M₁-Q₄₂₁ (as in [NCBI/Protein](#) entry NP_001400852.1), N-terminal GST-HIS₆ fusion protein with a 3C cleavage site, expressed in Sf9 insect cells

Product identity: CDK2/CycA1 Lot 001, has been verified by mass spectrometry LC-ESI-MS/MS

Theoretical MW _{GST-CDK2} :	60222	Da
Theoretical MW _{GST-CycA1} :	75583	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

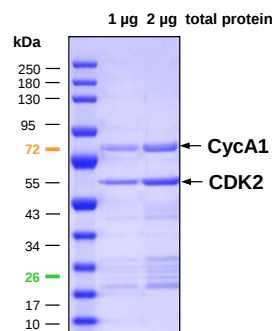
For complete recovery, mix well and spin before use. Product must not be stored in diluted solutions, aliquots below 10 µl are not advisable. Avoid repeated freeze-thaw cycles!

Protein concentration: 0.442 µg/µl
(Bradford method using BSA [Sigma, cat# A-7638, Lot 79H7641] as standard protein)

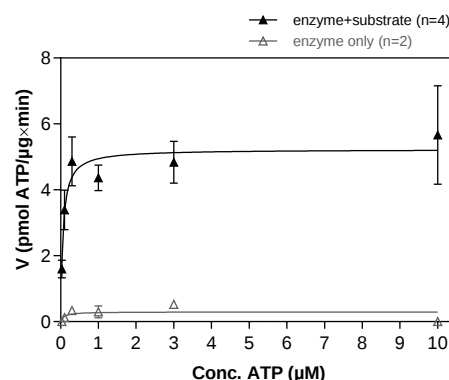
Biochemical Parameters:

Specific kinase activity (P_i transfer): 5.2 pmol/µg*min
ATP-K_M: 0.06 µM

CDK2/CycA1 Lot 001:
Coomassie stain



CDK2/CycA1 Lot 001:
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 80 µg/ml
 - Kinase: 0.5 µg/ml

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

Sequence information

GST-CDK2 Recombinant Fusion Protein Amino Acid Sequence

1	MSPILGYWKI	KGLVQPTRLL	LEYLEEKYEE	HLIERDEGDK	WRNKKFELGL	EFPNLPYYID	60
61	GDVKLTQSMA	IIRYIADKHN	MLGGCPKERA	EISMLEGAVL	DIRYGVSRIA	YSKDFETLKV	120
121	DFLSKLPEML	KMFEDRLCHK	TYLNGDHVTH	PDFMLYDALD	VVLYMDPMCL	DAFPKLVCFK	180
181	KRIEAIQID	KYLKSSKYIA	WPLQGWQATF	GGGDHPPKSD	LVPRGSMENF	QKVEKIGEGT	240
241	YGVVYKARNK	LTGEVVALKK	IRLDTETEGV	PSTAIRESISL	LKELNHPNIV	KLLDVIHTEN	300
301	KLYLVFEFLH	QDLKKFMDAS	ALTGIPLPLI	KSYLEFQLLQ	LAFCHSHRVL	HRDLKPQNLL	360
361	INTEGAIKLA	DFGLARAFGV	PVRTYTHEVV	TLWYRAPEIL	LGCKYYSTAV	DIWSLGCIFA	420
421	EMVTRRALFP	GDSEIDQLFR	IFRTLGTPE	VVWPGVTSMP	DYKPSFPKWA	RQDFSKVPP	480
481	LDEDGRSLLS	QMLHYDPNKR	ISAKAALAH	FFQDVTKPVP	HLRL		540

1-218: GST Red: HIS6-tag Green: 3C cleavage site blue: CDK2

CDK2 wt¹ Amino Acid Sequence

1	MENFQKVEKI	GEGTYGVVYK	ARNKLTGEV	ALKKIRXDTE	TEGVPSTAIR	EISLLKELNH	60
61	PNIVKLLDVI	HTENKLYLVF	EFLHQDLKKE	MDASALTGIP	LPLIKSYLFQ	LLQGLAFCHS	120
121	HRVLHRDLKP	QNLLINTEGA	IKLADFLGAR	AFGVPVRYT	HEVVTWYRA	PEILLGCKYY	180
181	STAVDIWSLG	CIFAEMVTRR	ALFPGDSEID	QLFRIFRTL	TPDEVVWPGV	TSMPDYKPSF	240
241	PKWARQDFSK	VVPLDEDGR	SLLSQMLHYD	PNKRISAKAA	LAHPFFQDVT	KPVPHRL	300

blue: CDK2 sequence expressed in recombinant protein

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

GST-CycA1 Recombinant Fusion Protein Amino Acid Sequence

1	MSPILGYWKI	KGLVQPTRLL	LEYLEEKYEE	HLIERDEGDK	WRNKKFELGL	EFPNLPYYID	60
61	GDVKLTQSMA	IIRYIADKHN	MLGGCPKERA	EISMLEGAVL	DIRYGVSRIA	YSKDFETLKV	120
121	DFLSKLPEML	KMFEDRLCHK	TYLNGDHVTH	PDFMLYDALD	VVLYMDPMCL	DAFPKLVCFK	180
181	KRIEAIQID	KYLKSSKYIA	WPLQGWQATF	GGGDHPPKSD	PMGHHHHHFG	RDSLEVLFGG	240
241	PMHCSNPKSG	VVLATVARGP	DACQILTRAP	LGQDPPQRTV	LGLLTANGQY	RRTCGQGITR	300
301	IRCYSGSENA	FPPAGKKALP	DCGVQEPKQ	GFDIYMDELE	QGDRDSCSVR	EGMAFEDVYE	360
361	VDTGTLKSDL	HFLLDFTVS	PMLVDSSLS	QSEDISSLGT	DVINVTEYAE	EIYQYLREAE	420
421	IRHRPKAHYM	KKQPDITEGM	RTILVDWLVE	VGEYKLRAE	TLYLAVNFLD	RFLSCMSVLR	480
481	GKLQLVGTAA	MLLASKYEEI	YPPEVDEFVY	ITDDTYTKRQ	LLKMEHLLLK	VLAFLDTPVT	540
541	TNQFLLQYLR	RQGVCVRTEN	LAKYVAELSL	LEADPFLKYL	PSLIAAAAF	LANYTVNKH	600
601	WPETLAAFTG	YSLSEIVPCL	SELHKAYLDI	PHRPQQAIRE	KYKASKYLCV	SLMEPPAVLL	660
661	LQ						720

1-218: GST Red: HIS6-tag Green: 3C cleavage site blue: CycA1

CycA1 wt² Amino Acid Sequence

1	MHCSNPKSGV	VLATVARGPD	ACQILTRAPL	GQDPPQRTVL	GLLTANGQYR	RTCGQGITRI	60
61	RCYSGSENAF	FPAGKKALPD	CGVQEPKQ	FEDIYMDELE	GDRDSCSVRE	GMAFEDVYEV	120
121	DTGTLKSDLH	PFLDFTNTVSP	MLVDSSLSQ	SEDISSLGT	VINTEYAE	IYQYLREAEI	180
181	RHRPKAHYMK	KQPDITEGMR	TILVDWLVEV	GEEYKLRAT	LYLAVNFLDR	FLSCMSVLRG	240
241	KLQLVGTAA	LLASKYEEIY	PPEVDEFVYI	TDDTYTKRQL	LKMEHLLLKV	LAFDTPVT	300
301	NQFLLQYLR	QGVCVRTENL	AKYVAELSL	EADPFLKYL	SLIAAAAFCL	ANYTVNKHFW	360
361	PETLAAFTGY	SLSEIVPCLS	ELHKAYLDIP	HRPQQAIREK	YKASKYLCVS	LMEPPAVLLL	420
421	Q						480

blue: CycA1 sequence expressed in recombinant protein

²[NCBI/Protein](#) accession number NP_001400852.1[HGNC](#) identifier CycA1: CCNA1