

ProQinase™ CDK2/CycE1

cyclin dependent kinase 2

Recombinant Human Active Protein Kinase

HGNC Symbol: CDK2

Synonyms: p33

Product No.: 0050-0055-1

Lot: 010

Description: Human CDK2, full length, amino acids M₁-L₂₉₈ (as in [NCBI/Protein](#) entry NP_001789.2) and human CycE1, amino acids M₁-A₃₉₅ (as in [NCBI/Protein](#) entry NP_476530.1), both N-terminally fused to GST-Thrombin cleavage site, co-expressed in Sf9 insect cells

Product identity: CDK2/CycE1 Lot 010, was confirmed as CDK2/CycE1 by mass spectroscopy LC-ESI-MS/MS

Theoretical MW_{CDK2}: 60,222 Da

Theoretical MW_{CycE1}: 72,041 Da

Expression host: Sf9 insect cells

Purification: GST-Affinity Chromatography

Activation: by coexpression with CycE1

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: 0.312 µg/µl

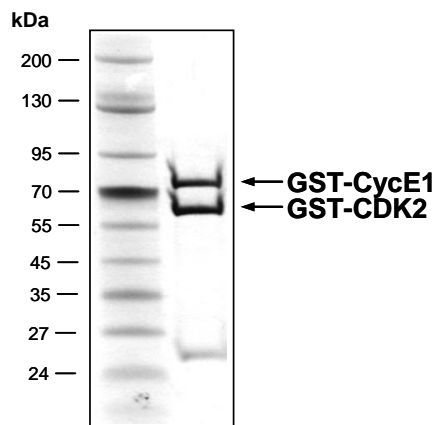
(Bradford method using BSA [Sigma, cat# A-7638, Lot 79H7641] as standard protein)

Biochemical Parameters:

Specific kinase activity (P_i transfer): 88 pmol/µg × min

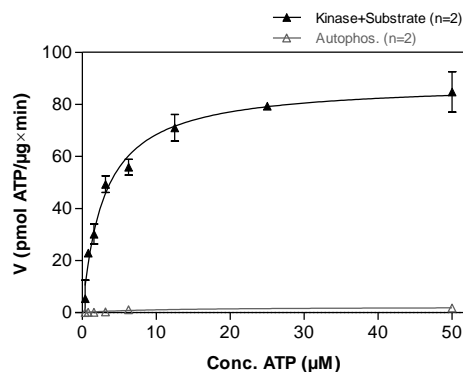
ATP-K_M: 2.9 µM

CDK2/CycE1 Lot 010:
Coomassie stain



4 µg GST-CDK2/CycE1

CDK2/CycE1 Lot 010:
Determination of V_{max} and K_M value for ATP



Determination of K_M value & Specific activity:

- 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: RB-CTF 100 µg/ml
 - CDK2/CycE1: 1.0 µg/ml
- Filter binding assay
 - MSFC membrane (Millipore)

Additional assay technology:

CDK2/CycE1 Lot010 was also successfully tested by Reaction Biology for the use with the ADP-Glo™ Kinase assay from Promega ADP-Glo assay conditions may vary from radiometric assay conditions, please inquire for assay details

ProQinase™ CDK2/CycE1

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GST-CDK2 Recombinant Fusion Protein Amino Acid Sequence							
1	MSPILGYWKI	KGLVQPTRL	LEYLEEKYEE	HLYERDEGDK	WRNKKFELGL	EFPNLPYYID	60
61	GDVKLTQSM	IIRYIADKHN	MLGGCPKERA	EISMLEGAVL	DIRYGVSRIA	YSKDFETLKV	120
121	DFLSKLP EML	KMFEDRLCHK	TYLNGDHVTH	PDFMLYDALD	VVLYMDPMCL	DAFPKLVCFK	180
181	KRIEAI PQID	KYLKSSKYIA	WPLQGWQATF	GGGDHPPKSD	LVPRGSMENF	QKVEKIGEGT	240
241	YGVVYKARNK	LTGEVVALKK	IRLDTETEGV	PSTAIRESISL	LKELNHPNIV	KLLDVIHTEN	300
301	KLYLVFEFLH	QDLKCFMDAS	ALTGIPLPLI	KSYLFQLLQG	LAFCHSHRVL	HRDLKPQNLL	360
361	INTEGAIKLA	QDFGLARAFGV	PVRTYTHEVV	TLWYRAPEIL	LGCKYYSTAV	DIWSLGCIFA	420
421	EMVTRRALFP	GDSEIDQLFR	IFRTLGTPE	VVWPGVTSMP	DYKPSFPKWA	RQDFSKVVP	480
481	LDEDGRSLLS	QMLHYDPNKR	ISAKAALAH	FFQDVTKPVP	HLRL		540

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

CDK2 wt ¹ Amino Acid Sequence							
1	MENFQVKEKI	GEGTYGVVYK	ARNKLTGEVV	ALKKIRLDTE	TEGVPSTAIR	EISLLKELNH	60
61	PNIVKLLDVI	HTENKLYLVF	EFLHQDLKKE	MDASALTGIP	LPLIKSYLFQ	LLQGLAFCHS	120
121	HRVLHRDLKP	QNLLINTEGA	IKLADFGAR	AFGVPVRYT	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-CycE1 Recombinant Fusion Protein Amino Acid Sequence							
1	MSPILGYWKI	KGLVQPTRL	LEYLEEKYEE	HLYERDEGDK	WRNKKFELGL	EFPNLPYYID	60
61	GDVKLTQSM	IIRYIADKHN	MLGGCPKERA	EISMLEGAVL	DIRYGVSRIA	YSKDFETLKV	120
121	DFLSKLP EML	KMFEDRLCHK	TYLNGDHVTH	PDFMLYDALD	VVLYMDPMCL	DAFPKLVCFK	180
181	KRIEAI PQID	KYLKSSKYIA	WPLQGWQATF	GGGDHPPKSD	LVPRGSPERD	TMKEDGGAEF	240
241	SARSRKRKAN	VTVFLQDPDE	EMAKIDRTAR	DQCGSQPDN	NAVCADPCSL	IPTPKEDDD	300
301	RVYPNSTCKP	RIIAPSRGSP	LPVLSWANRE	EVWKIMLNKE	KTYLRDQHFL	EQHPLLQPKM	360
361	RAILLDWLME	VCEVYKLHRE	TFYLAQDFD	RYMATQENVV	KTLLQLIGIS	SLFIAAKLEE	420
421	IYPPKLHQFA	YVTDGACSGD	EILTMELMIM	KALKWRLSPL	TIVSWLNVYM	QVAYLNDLHE	480
481	VLLPQYPQOI	FIQIAELLDL	CVLDVDCLEF	PYGILAASAL	YHFSSELMD	KVSGYQWCDI	540
541	ENCVKWMVPF	AMVIRETGSS	KLKHFGRVAD	EDAHNIQTHR	DSL DLLDKAR	AKKAMLSEQN	600
601	RASPLPSGLL	TPPQSGKKQS	SGPEMA				660

1-218: GST **Pink**: Thrombin cleavage site **blue**: CycE1

CycE1 wt ² Amino Acid Sequence							
1	MKEDGGAEFS	ARSRKRKANV	TVVFLQDPDEE	MAKIDRTARD	QCGSQPDN	AVCADPCSLI	60
61	PTPKEDDDR	VYPNSTCKPR	IIAPSRGSP	PVLSWANREE	VWKIMLNKEK	TYLRDQHFL	120
121	QHPLLQPKMR	AILLDWLMEV	CEVYKLHRET	FYLAQDFD	YMATQENVV	TLLQLIGISS	180
181	LFIAAKLEEI	YPPKLHQFAY	VTDGACSGDE	ILTMELMIM	ALKWRLSPL	IVSWLNVYM	240
241	VAYLNDLHEV	LLPQYPQOIF	IQIAELLDLC	VLDVDCLEFP	YGILAASALY	HFSSSELMQK	300
301	VSGYQWCDIE	NCVKWMPFA	MVIRETGSSK	LKHFRGVADE	DAHNIQTHRD	SLDLLDKARA	360
361	KKAMLSEQNR	ASPLPSGLLT	PPQSGKKQSS	GPEMA			420

blue: CycE1 sequence expressed in recombinant protein

²[NCBI/Protein](#) accession number NP_476530.1

HGNC identifier: CCNE1

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