

ProQinase™ CDK2/CycA2

cyclin dependent kinase 2 / Cyclin A2

Recombinant Human Active Protein Kinase

HGNC Symbol: CDK2

Synonyms: p33

Product No.: 0050-0054-1

Lot: 005

Description: Human CDK2, full length, amino acids M₁-L₂₉₈ (as in [NCBI/Protein](#) entry NP_001789.2) and human CycA2, full length, amino acids M₁-L₄₃₂ (as in [NCBI/Protein](#) entry NP_001228.1), both N-terminal GST fusion proteins with a Thrombin cleavage site, coexpressed in Sf9 insect cells

Product identity: CDK2/CycA2 Lot 005, was confirmed as CDK2/CycA2 by mass spectroscopy LC-ESI-MS/MS

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

Theoretical MW_{GST-CycA2}: 74,928 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: 0.273 µg/µl

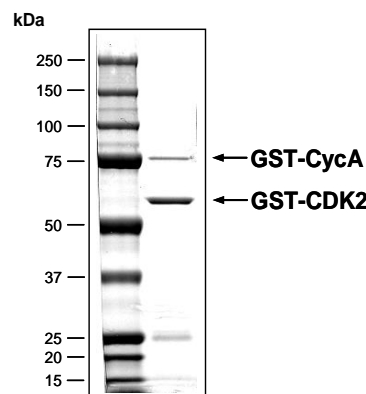
(Bradford method using BSA [Sigma, cat# A-7638, Lot 79H7641] as standard protein)

Biochemical Parameters:

Specific kinase activity (P_i transfer): 67 pmol/µg × min

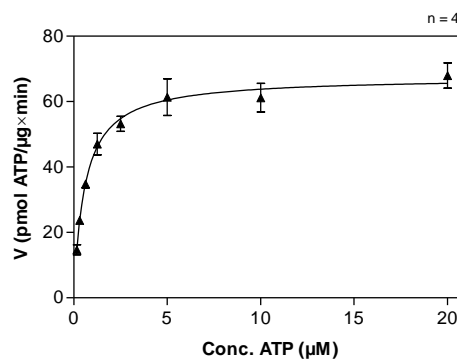
ATP-K_M: 0.58 µM

CDK2/CycA2 Lot 005: Coomassie stain



2.0 µg GST-CDK2/GST-CycA

CDK2/CycA2 Lot 005: 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: Histone H1 20 µg/ml
 - Kinase: 1 µg/ml
- Filter binding assay
- MSFC membrane (Millipore)

Additional assay technology:

CDK2/CycA2 Lot 005 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/CycA2

Product No.: 0050-0054-1

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	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	MENFQKVEKI	GEGTYGVVYK	ARNKLTGEVV	ALKKIRXDTE	TEGVPSTAIR	EISLLKELNH	60
61	PNIVKLLDVI	HTENKLYLVF	EFLHQDLKKE	MDASALTGIP	LPLIKSYLFQ	LLQGLAFCHS	120
121	HRVLHRDLKP	QNLLINTEGA	IKLADFLAR	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-CycA2 Recombinant Fusion Protein Amino Acid Sequence							
1	MSPILGYWKI	KGLVQPTRL	LEYLEEKYEE	HLYERDEGDK	WRNKKFELGL	EFPNLPYYID	60
61	GDVKLTQSMA	IIRYIADKHN	MLGGCPKERA	EISMLEGAVL	DIRYGVSRIA	YSKDFETLKV	120
121	DFLSKLP EML	KMFEDRLCHK	TYLNGDHVTH	PDFMLYDALD	VVLYMDPMCL	DAFPKLVCFK	180
181	KRIEAI PQID	KYLKSSKYIA	WPLQGWQATF	GGGDHPPKSD	LVPRGSMVLMG	NSAPGPATRE	240
241	AGSALLALQQ	TALQEDQENI	NPEKAAPVQQ	PRTRAAVL	KSGNPRGLAQ	QORPKTRRVA	300
301	PLKDLFVNDE	HVTVPPWKAN	SKQPAFTIHV	DEAEKEAQQK	PAESQKIERE	DALAFNSAIS	360
361	LPGPRKPLVP	LDYPMGDSFE	SPHTMDMSIV	LEDEKPVSVN	EVPDYHEDIH	TYLREMEVKC	420
421	KPKVGYMKKQ	PDITNSMRAI	LVDWLVEVGE	EYKLNQNETLH	LAVNYIDRFL	SSMSVLRGKL	480
481	QLVGTAAAML	ASKFEEIYPP	EVAEFVYITD	DTYTKKQVLR	MEHLVLKVL	FDLAAPTQVQ	540
541	FLTQYFLHQQ	PANCKVESLA	MFLGELSLID	ADPYLKYLPS	VIAGAAFHLA	LYTVTQGSWP	600
601	ESLIRKTGYT	LESCLKPCLMD	LHQTYLKAPO	HAQQSIREKY	KNSKYHGVSL	LNPPELNL	660

1-218: GST **Pink**: Thrombin cleavage site **blue**: CycA2

CycA2 wt ² Amino Acid Sequence							
1	MLGNSAPGPA	TREAGSALLA	LQQTALQEDQ	ENINPEKAAP	VQQPRTRAAAL	AVLKSGNPRG	60
61	LAQQORPKTR	RVAPLKDLPV	NDEHVTVPW	KANSKQPAFT	IHVDEAEKEA	QKKPAESQKI	120
121	EREDALAFNS	AISLPGPRKP	LVPLDYPMDG	SFESPHMDM	SIVLEDEKPV	SVNEVPDYHE	180
181	DIHTYLREME	VKCKPKVGYM	KKQPDITNSM	RAILVDWLVE	VGEEYKLQNE	TLHLAVNYID	240
241	RFLSSMSVLR	GKLQLVGTAA	MLLASKFEEI	YPPEVAEFVY	ITDDTYTKKQ	VLRMEHLVLK	300
301	VLTFDLAAPT	VNQFLTQYFL	HQQPANCKVE	SLAMFLGELS	LIDADPYLKY	LPSVIAGAAF	360
361	HLALYTVTQ	SWPESLIRKT	GYTLESCLKPC	LMDLHQTYLK	APQHAQQSIR	EKYKNSKYHG	420
421	VSLNPPETL	NL					480

blue: CycA2 sequence expressed in recombinant protein

²[NCBI/Protein](#) accession number NP_001228.1

HGNC identifier CycA2: CCNA2

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