

CDK20/CycT1

cyclin dependent kinase 20

Recombinant Human Active Protein Kinase

HGNC Symbol: CDK20

Synonyms: CAK-kinase p42, CCRK, CDCH, p42, PNQALRE

Product No.: 1528-0345-1

Lot: 008

Description: Human CDK20, amino acids M₁-G₃₄₆ (as in [NCBI/Protein](#) entry NP_001034892.1), N-terminal GST-HIS₆ fusion protein with a 3C cleavage site and human CycT1, amino acids M₁-L₇₂₆ (as in [NCBI/Protein](#) entry NP_001231.2), N-terminally fused to HIS₆-Thrombin cleavage site, coexpressed in Sf9 insect cells

Product identity: CDK20/CycT1 Lot 008, was confirmed as CDK20/CycT1 by mass spectroscopy LC-ESI-MS/MS

Theoretical MW_{GST-CDK20}: 66,969 Da

Theoretical MW_{CycT1}: 85,441 Da

Expression host: Sf9 insect cells

Purification: Immobilized Metal 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, 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: 0.213 µg/µl

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

Biochemical Parameters:

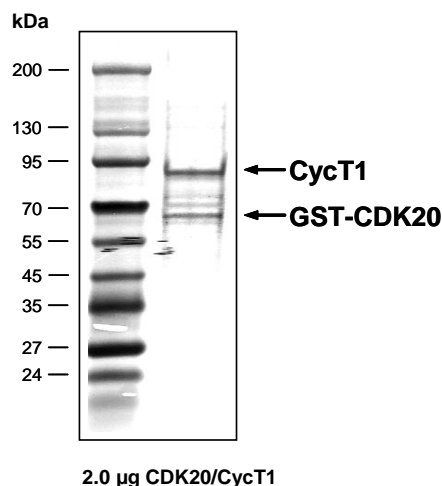
Specific kinase activity (P_i transfer): 10 pmol/µg × min

ATP-K_M: 7.6 µM

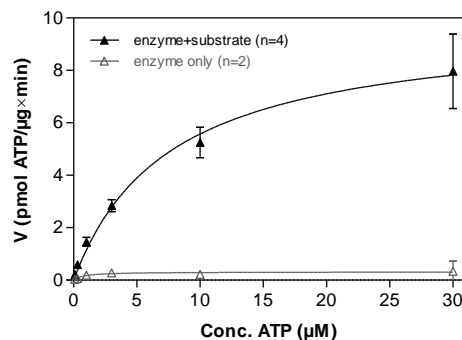
Additional assay technology:

CDK20/CycT1 Lot 008 was also successfully tested by ProQinase 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

CDK20/CycT1 Lot 008: Coomassie stain



CDK20/CycT1 Lot 008: 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: GSK3-derived peptide, 100 µg/ml
 - CDK20/CycT1: 4 µg/ml
- Filter binding assay
 - MSPH membrane (Millipore)

CDK20/CycT1

Product No.: 1528-0345-1

GST-CDK20 Recombinant Fusion Protein Amino Acid Sequence							
1	MSPILGYWKI	KGLVQPTRL	LEYLEEKYEE	HLYERDEGDK	WRNKKFELGL	EFPNLPYYID	60
61	GDVKLTQSMA	IIRYIADKHN	MLGGCPKERA	EISMLEGAVL	DIRYGVSRIA	YSKDFETLKV	120
121	DFLSKLPPEML	KMFKDRLCHK	TYLNGDHVTH	PDFMLYDALD	VVLYMDPMCL	DAFPKLVCFK	180
181	KRIEAIPOID	KYLKSSKYIA	WPLQGWQATF	GGGDHPPKSD	PMGHHHHHG	RDSLEVLFCG	240
241	PLAMDQYCIL	GRIGEGAHI	VFKAKHVTG	EIVALKKVAL	RRLEDGFPNQ	ALREIKALQE	300
301	MEDNQYVVQL	KAVFPHGGGF	VLAFEFMLS	LAEVVRAQR	PLAQAQVKS	LQMLLKGVAF	360
361	CHANNIVHRD	LKPANLLISA	SGQLKIADFG	LARVSPDGS	RLYTHQVATR	WYRAPELLYG	420
421	ARQYDQGVDL	WSVGCIMGEL	LNGSPLFPGK	NDIEQLCYVL	RILGTPNPQV	WPELTELDPY	480
481	NKISFKEQVP	MPELEVLPDV	SPQALDLLGQ	FLLYPPHQRI	AASKALLHQY	FFTAPLPAHP	540
541	SELPIPQRLG	GPAPKAHPG	PHIHDFHVDR	PLEESLLNPE	LIRPFILEG		600

1-218: GST Red: HIS6-tag Green: 3C cleavage site blue: CDK20

CDK20 wt ¹ Amino Acid Sequence							
1	MDQYCILGRI	GEGAHVIVFK	AKHVETGEIV	ALKKVALRRL	EDGFPNQALR	EIKALQEMED	60
61	NQYVVQLKAV	FPHGGGFVLA	FEFMLSDLAE	VVRHAQRPLA	QAQVKSYLQM	LLKGVAFCHA	120
121	NNIVHRDLKP	ANLLISASGQ	LKIADFGLAR	VFSPDGSRLY	THQVATRWR	APELLYGARQ	180
181	YDQGVLDLWSV	GCIMGELLNG	SPLFPKNDI	EQLCYVLRIL	GTPNPQVWPE	LTELDPYINK	240
241	SFKEQVPMLP	EEVLPDVSQ	ALDLLGQFLL	YPPHQRIAS	KALLHQYFFT	APLPAHPSEL	300
301	PIPQRLGGPA	PKAHPGPHI	HDFHVDRPLE	ESLLNPELIR	PFILEG		360

blue: CDK20 sequence expressed in recombinant protein ¹NCBI/Protein accession number NP_001034892.1

HIS-CycT1 Recombinant Fusion Protein Amino Acid Sequence							
1	MSPIDPMGHH	HHHHGRRRAS	VAAGILVPRG	SPGLDGIYAR	GIQASMEGER	KNNKRWYFT	60
61	REQLENSPSR	RFGVDPDKEL	SYRQQAANLL	QDMGQRLNVS	QLTINTAIVY	MHRFYMIQSF	120
121	TQFPNGSVAP	AALFLAAKVE	EQPKLEHVI	KVAHTCLHPQ	ESLPDTRSEA	YLQVQDLVI	180
181	LESIILOTLG	FELTIDHPHT	HVVKCTQLVR	ASKDLAQTYS	FMATNSLHLT	TFSLQYTPPV	240
241	VACVCIHLAC	KWSNWEIPVS	TDGKHWWEYV	DATVTLELLD	ELTHEFLQIL	EKTPNRLKRI	300
301	WNWRACEAAK	KTKADDRGTD	EKTSEQTILN	MISQSSSDTT	IAGLMSMSTS	TTSAVPSLPV	360
361	SEESSNLTS	VEMLPGKRWL	SSQPSFKLEP	TQGHRTSENL	ALTGVDSHSLP	QDGSNAFISQ	420
421	KQNSKSVPSA	KVSLKEYRAK	HAELAAQKR	QLENMEANVK	SQYAYAAQNL	LSHSHSSSV	480
481	ILKMPIEGSE	NPERPFLEKA	DKTALKMRIP	VAGGDKAASS	KPEEIKMRIK	VHAAADKHNS	540
541	VEDSVTKSRE	HKEKHKTHPS	NHHHHNHHS	HKHSHSQLPV	GTGNKRPDGP	KHSSQTSNLA	600
601	HKTYLSSSF	SSSSSTRKRG	PSEETGGAVF	DHPAKIAKST	KSSSLNFSFP	SLPTMGQMPG	660
661	HSSDTSGLSF	SQPSCKTRVP	HSKLDKGPTG	ANGHNTTQTI	DYQDTVNMLH	SLLSAQGVQP	720
721	TQPTAFEFVR	PYSDYLNPRS	GGISSRSGNT	DKPRPPPLPS	EPPPPLPLPK	K	780

1-218: GST Red: HIS6-tag Pink: Thrombin cleavage site blue: CycT1

CycT1 wt ² Amino Acid Sequence							
1	MEGERKNNNK	RWYFTREQLE	NSPSRRFGVD	PDKELSYRQQ	AANLLQDMGQ	RLNVSQLTIN	60
61	TAIVYMHRFY	MIQSFTQFPG	NSVAPAAFL	AAKVEEQPK	LEHVIVKVAHT	CLHPQESLPD	120
121	TRSEAYLQV	QDLVILESII	LQTLGFELTI	DHPHTHVVKC	TQLVRASKDL	AQTSYFMATN	180
181	SLHLTTFSLQ	YTPPVVACVC	IHLACKWSNW	EIPVSTDGKH	WWEYVDATVT	LELDELTHE	240
241	FLQILEKTPN	RLKRIWNWRA	CEAAKTKAD	DRGTDEKTSE	QTILNMISQS	SSDTTIAGLM	300
301	SMSTSTTSAV	PSLPVSEESS	SNLTSVEMLP	GKRWLSSQPS	FKLEPTQGHR	TSENALATGV	360
361	DHSLPQDGSN	AFISQKQNSK	SVPSAKVSLK	EYRAKHAEEL	AAQKRQLENM	EANVKSQYAY	420
421	AAQNLLSHHD	SHSSVILKMP	IEGSENPERP	FLEKADKTAL	KMRIPVAGGD	KAASSKPEEI	480
481	KMRIKVHAAA	DKHNSVEDSV	TKSREHKEKH	KTHPSNHHHH	HNHSHKHSH	SQLPVGTGNK	540
541	RPDGPKHSSQ	TSNLAHKTY	LSSSFSSSSS	TRKRGPSSET	GGAVFDHPAK	IAKSTKSSSL	600
601	NFSFPLPTM	GQMPGHSSDT	SGLSFSQPS	KTRVPHSKLD	KGPTGANGHN	TTQTIDYQDT	660
661	VNMLHSLLSA	QGVQPTQPTA	FEFVRPYSY	LNPRSGGISS	RSGNTDKPRP	PPLPSEPPPP	720
721	LPPLPK						780

blue: CycT1 sequence expressed in recombinant protein ²NCBI/Protein accession number NP_001231.2

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