

ProQinase™ 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: 009

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 009, was confirmed as CDK20/CycT1 by mass spectroscopy LC-ESI-MS/MS

Theoretical MW_{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

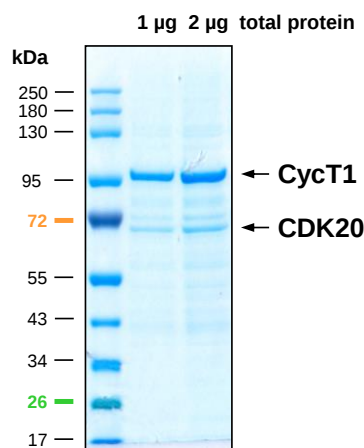
For complete recovery, mix well and spin before use. Product must not be stored in diluted solutions, aliquots below 10 µl are not advisable. Avoid repeated freeze-thaw cycles!

Protein concentration: 0.668 µg/µl
(Bradford method using BSA [Sigma, cat# A-7638, Lot 79H7641] as standard protein)

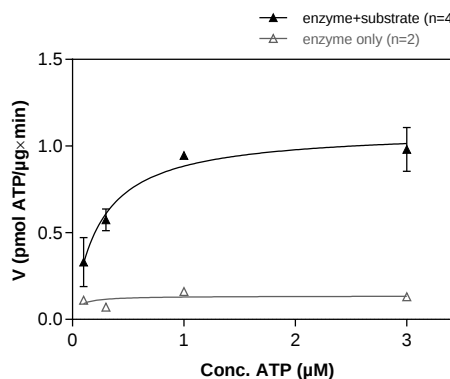
Biochemical Parameters:

Specific kinase activity (P_i transfer): 1.1 pmol/µg x min
ATP-K_M: 0.24 µM

CDK20/CycT1 Lot 009: Coomassie stain



CDK20/CycT1 Lot 009: 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-CDC25tide 80 µg/ml
Kinase: 4 µg/ml

- Filter binding assay
MSFC membrane (Corning)

CDK20/CycT1

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Recombinant Proteins

GST-CDK20 Recombinant Fusion Protein Amino Acid Sequence

1	MSPILGYWKI	KGLVQPTRL	LEYLEEKYEE	HLIERDEGDK	WRNKKFELGL	EFPNLPYYID	60
61	GDVKLTQSMA	IIRYIADKHN	MLGGCPKERA	EISMLEGAVL	DIRYGVSRIA	YSKDFETLKV	120
121	DFLSKLPEML	KMFKDRLCHK	TYLNGDHVTH	PDFMLYDALD	VVLYMDPMCL	DAFPKLVCFK	180
181	KRIEAIPOID	KYLKSSKYIA	WPLQGWQATF	GGGDHPPKSD	PMGHHHHHHG	RDSLEVLFGQ	240
241	PLAMDOYCI	GRIGEGAHGI	VFKAKHVETG	EIVALKKVAL	RRLEDGFNPQ	ALREIKALQE	300
301	MEDNQYVVQL	KAVFPHGGGF	VLAFAFMLS	LAEVVRHAQR	PLAQAVKSY	LQMLLKGVAF	360
361	CHANNIVHRD	LKPANLLISA	SGQLKIADFG	LARVSPDGS	RLYTHQVATR	WYRAPELLYG	420
421	ARQYDQGVDL	WSVGCIMGEL	LNGSPLFPGK	NDIEQLCYVL	RILGTPNPQV	WPELTELDPY	480
481	NKISFKEQVP	MPLLEVLPDV	SPQALDLLGQ	FLLYPPHQRI	AASKALLHQY	FFTAPLPAHP	540
541	SELPQPRLG	GPAPKAHPGP	PHIHDHFVDR	PLEESLLNPE	LIRPFILEG		600

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

CDK20 wt¹ Amino Acid Sequence

1	MDQYCILGRI	GEGAHGIVFK	AKHVETGEIV	ALKKVALRRL	EDGFPNQALR	EIKALQEMED	60
61	NQYVVQLKAV	FPHGGGFVLA	FEFMLSALAE	VVRHAQRPLA	QAQVKSYLQM	LLKGVAFCHA	120
121	NNIVHRDLKP	ANLLISASGQ	LKIADFGLAR	VFSPDGSRLY	THQVATRWYR	APELLYGARQ	180
181	YDQGVLDLSV	GCIMGELLNG	SPLFPKNDI	EQLCYVLRIL	GTPNPQVWPE	LTELDPYNKI	240
241	SFKEQVPMPL	EEVLPDVSPQ	ALDLLGQFLL	YPPHQRIAAS	KALLHQYFFT	APLPAHPSEL	300
301	PIPQRLGGPA	PKAHPGPPHI	HDFHVDRLPE	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	KNNNKRWYFT	60
61	REQLENSPSR	RFGVDPDKEL	SYRQQAANLL	QDMGQRLNVS	QLTINTAIVY	MHRFYMIQSF	120
121	TQFPNGSVAP	AALFLAAKVE	EQPKKLEHVI	KVAHTCLHPQ	ESLPDTRSEA	YLQQVQDLVI	180
181	LESIIQLTLG	FELTIDHPHT	HVVKCTQLVR	ASKDLAQTSY	FMATNSLHLT	TFSLOYTPPV	240
241	VACVCIHLAC	KWSNWEIPVS	TDGKHWEYV	DATVLELDD	ELTHEFLQIL	EKTPNRLKRI	300
301	WNWRACEAAK	KTKADDRGTD	EKTSEQTILN	MISQSSSDTT	IAGLMSMSTS	TTSAPVSLPV	360
361	SESSSNLTS	VEMLPGKRWL	SSQPSFKLEP	TQGHRTSEN	ALTGVDSHSLP	QDGSNAFISQ	420
421	KQNSKSVPSA	KVSLKEYRAK	HAEELAAQKR	QLENMEANVK	SQYAYAAQNL	LSHSDSHSSV	480
481	ILKMPIEGSE	NPERPFLEKA	DKTALKMRIP	VAGGDKAASS	KPEEIKMRIK	VHAAADKHNS	540
541	VEDSVTKSRE	HKEKHKTHPS	NHHHHNHHHS	HKHSHSOLPV	GTGNKRPDGP	KHSSQTSNLA	600
601	HKTYSLSSSF	SSSSSTRKRG	PSEETGGAVF	DHPAKIAKST	KSSSLNFSFP	SLPTMGQMPG	660
661	HSSDTSGLSF	SQPSCKTRVP	HSKLDKGPTG	ANGHNTQTIT	DYQDVTNMLH	SLLSAQGVQP	720
721	TQPTAFEFVR	PYSDYLNPRS	GGISSRSGNT	DKPRPPPLPS	EPPPPLPLPK	K	780

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

CycT1 wt² Amino Acid Sequence

1	MEGERKNNNK	RWYFTREQLE	NSPSRRFGVD	PDKELSYRQQ	AANLLQDMGQ	RLNVSQTLTN	60
61	TAIVYMHRFY	MIQSFTQFP	NSVAPAAFL	AAKVEEQPKK	LEHVIKVAHT	CLHPQESLPD	120
121	TRSEAYLQQV	QDLVILESII	LQTLGFELTI	DHPHTHVVKC	TQLVRASKDL	AQTSYFMATN	180
181	SLHLTTFSLQ	YTPPVVACVC	IHLACKWSNW	EIPVSTDGKH	WWEYVDATVT	LELLDELTHE	240
241	FLQILEKTPN	RLKRIWNWRA	CEAAKTKKAD	DRGTDEKTSE	QTILNMISQS	SSDTTIAGLM	300
301	SMSTSTTSV	PSLPVSEESS	SNLTSVEMLP	GKRWLSSQPS	FKLEPTQGHR	TSENALTGV	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	RPGDPKHSSQ	TSNLAHKTY	LSSSFSSSSS	TRKRGPSSET	GGAVFDHPAK	IAKSTKSSSL	600
601	NFSFPLSLPTM	GQMPGHSSDT	SGLSFSQPS	KTRVPHSKLD	KGPTGANGHN	TTQTIDYQDT	660
661	VNMLHSLLSA	QGVQPTQPTA	FEFVRPYSDY	LNPRSGGISS	RSGNTDKPRP	PPLPSEPPPP	720
721	LPPLPK						780

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