

## ProQinase™ CDK9/CycT1

cyclin dependent kinase 9 / CyclinT1

Recombinant Human Active Protein Kinase

HGNC Symbol: CDK9

**Synonyms:** C-2k; CDC2L4; PITALRE; TAK; CDC2-related kinase

**Product No.:** 0371-0345-1

**Lot:** 012

**Description:** Human CDK9, full length, amino acids M<sub>1</sub>-F<sub>372</sub> (as in [NCBI/Protein](#) entry NP\_001252.1), N-terminal GST-HIS<sub>6</sub> fusion protein with a Thrombin cleavage site, and human CycT1, full length, amino acids M<sub>1</sub>-K<sub>726</sub> (as in [NCBI/Protein](#) entry NP\_001231.2), N-terminal HIS<sub>6</sub> fusion protein with a Thrombin cleavage site, coexpressed in Sf9 insect cells

**Product identity:** CDK9/CycT1 Lot 012, has been verified by mass spectroscopy LC-ESI-MS/MS

**Theoretical MW<sub>GST-CDK9</sub>:** 72,173 Da

**Theoretical MW<sub>CycT1</sub> :** 85,441 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:** 0.132 µg/µl

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

### Biochemical Parameters:

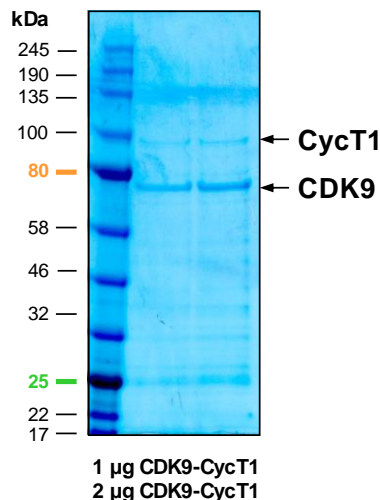
Specific kinase activity (P<sub>i</sub> transfer): 29 pmol/µg x min

ATP-K<sub>M</sub>: 0.7 µM

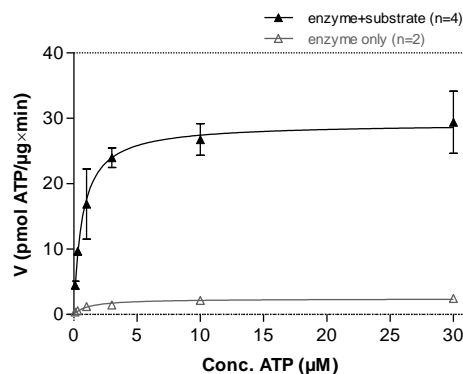
### Additional assay technology:

CDK9/CycT1 Lot 012 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

### CDK9/CycT1 Lot 012: Coomassie stain



### CDK9/CycT1 Lot 012: Determination of V<sub>max</sub> and K<sub>M</sub> value for ATP



### Determination of K<sub>M</sub> value & Specific activity:

- Assay conditions:
  - 60 mM HEPES-NaOH, pH 7.5
  - 3 mM MgCl<sub>2</sub>
  - 3 mM MnCl<sub>2</sub>
  - 3 µM Na-orthovanadate
  - 1.2 mM DTT
  - 50 µg/ml PEG<sub>20,000</sub>
  - ATP (variable)
  - Substrate: RBER-CHKtide, 80 µg/ml
  - Kinase: 0.5 µg/ml
- Filter binding assay
- MSFC membrane (Millipore)

## ProQinase™ CDK9/CycT1

Product No.: 0371-0345-1

GST-CDK9 Recombinant Fusion Protein Amino Acid Sequence							
1	MSPILGYWKI	KGLVQPTRL	LEYLEEKYEE	HLYERDEGDK	WRNKKFELGL	EFPNLPYYID	60
61	GDVKLTQSMA	IIRYIADKHN	MLGGCPKERA	EISMLEGAVL	DIRYGVSRIA	YSKDFETLKV	120
121	DFLSKLPPEML	KMFEDRLCHK	TYLNGDHVTH	PDFMLYDALD	VVLYMDPMCL	DAFPKLVCFK	180
181	KRIEAIPOID	KYLKSSKYIA	WPLQGWQATF	GGGDHPPKSD	PMGHHHHHG	RRRASVAAGI	240
241	LVPRGSPGLD	GICSRMAKQY	DSVECPFCDE	VSKYEKLAKI	GQGTFGVEFK	ARHRKTGQKV	300
301	ALKKVLMEKE	KEGFPITALR	EIKILQLLKH	ENVNLIIEIC	RTKASPNRC	KGSIYLVDFD	360
361	CEHDLAAGLLS	NVLVKFTLSE	IKRVMQMLLN	GLYYIHRNKI	LHRDMKAANV	LITRDGVLKL	420
421	ADFGARAFS	LAKNSQPNRY	TNRVVTWYR	PELLLGERD	YGPPIDLWGA	GCIMAEMWTR	480
481	SPIMQGNTEQ	HQLALISQLC	GSITPEVWPN	VDNYELYEKL	ELVKGQKRKV	KDRLKAYVRD	540
541	PYALDLIDKL	LVLDPAQRID	SDDALNHDFD	WSDPMPDLK	GMLSTHLTSM	FEYLAPPRRK	600
601	GSQITQOSTN	QSRNPATTNQ	TEFERVF				660

1-218: GST Red: HIS6-tag Pink: Thrombin cleavage site blue: CDK9

CDK9 wt <sup>1</sup> Amino Acid Sequence							
1	MAKQYDSVEC	PFCDEVSKYE	KLAKIGQGT	GEVFKARHRK	TGQKVALKKV	LMENEKEGFP	60
61	ITALREIKIL	QLLKHENNVN	LIEICRTKAS	PYNRCKGSIY	LVDFDCEHDL	AGLLSNVLVK	120
121	FTLSEIKRVM	QMLLNGLYYI	HRNKILHRDM	KAANVLITRD	GVLKLADFGL	ARAFSLAKNS	180
181	QPNRYTNRVV	TLWYRPEL	LGERDYGPPI	DLWGAGCIMA	EMWTRSPIMQ	GNTQHQHLL	240
241	ISQLCGSITP	EVWPNVDNVE	LYEKLELVKG	QKRKVKDRLK	AYVRDPYALD	LIDKLLVLDP	300
301	AQRIDSDDAL	NHDFWSDPM	PSDLKGMST	HLTSMFEYLA	PPRRKGSQIT	QOSTNQSRNP	360
361	ATTNQTEFER	VF					420

blue: CDK9 sequence expressed in recombinant protein

<sup>1</sup>[NCBI/Protein](#) accession number NP\_001252.1

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	TQFPGNVAP AALFLAAKVE EQPKKLEHVI KVAHTCLHPQ ESLPDRSEA YLQQVQDLVI	180
181	LESIIQLTLG FELTIDHPHT HVVKCTQLVR ASKDLAQTSY FMATNSLHLT TFSLQYTPPV	240
241	VACVCIHLAC KWSNWEIPVS TDGKHWWEYV DATVTLELLD ELTHEFLQIL EKTPNRLKRI	300
301	WNWRACEAAK KTKADDRGTD EKTSEQTILN MISQSSSDTT IAGLMSMSTS TTSAVPSLPV	360
361	SESSSNLTS VEMLPGKRWL SSQPSFKLEP TQGHRTSENL ALTGVDHSLP QDGSNAFISQ	420
421	KQNSKSVPSA KVSLKEYRAK HAEELAAQKR QLENMEANVK SQYAYAAQNL LSHHDSHSSV	480
481	ILKMPIEGSE NPERPFLEKA DKTALKMRIP VAGGDKAASS KP EEIKMRIK VHAAADKHNS	540
541	VEDSVTKSRE HKEKHKTHPS NHHHHNHHHS HKHSHSOLPV GTGNKRPGDP KHSSQTSNLA	600
601	HKTSLSSSF SSSSTRKRG PSEETGGAVF DHPAKIAKST KSSSLNFSFP SLPTMGMPG	660
661	HSSDTSGLSF SQPSCKTRVP HSKLDKGP TG ANGHNTTQTI DYQDVTNMLH SLLSAQGVQP	720
721	TQPTAFEFVR PYS DYLNPRS GGISSRSGNT DKPRPPPLPS EPPPPLPLP K	780

Red: HIS6-tag Pink: Thrombin cleavage site blue: CycT1

CycT1 wt<sup>1</sup> Amino Acid Sequence

1	MEGERKNNNK RWFYFTREOLE NSPSRRFGVD PDKELSYRQQ AANLLQDMGQ RLNVSQLTIN	60
61	TAIVYMHRFY MIQSFTQFPG NSVAPAALFL AAKVEEQPKK LEHVIKVAHT CLHPQESLPD	120
121	TRSEAYLQQV QDLVILESII LQTLGFELTI DHPHTHVVKC TQLVRASKDL AQTSYFMATN	180
181	SLHLTTFSLQ YTPPVVACVC IHLACKWSNW EIPVSTDGKH WWEYVDATVT LELLDELTHE	240
241	FLQILEKTPN RLKRIWNWRA CEAAKTKAD DRGTDEKTSE QTILNMISQS SSDTTIAGLM	300
301	SMSTSTTSAV PSLPVSEESS SNLTSVEMLP GKRWLSSQPS FKLEPTQGHR TSENALATGV	360
361	DHSLPQDGSN AFISQKQNSK SVPSAKVSLK EYRAKHAEEL AAQRQLENM EANVKSQYAY	420
421	AAQNLLSHHD SHSSVILKMP IEGSENPERP FLEKADKTAL KMRI PVAGD KAASSKPEEI	480
481	KMRIKVHAAA DKHNSVEDSV TKSREHKEKH KTHPSNHHHH HNHSHKHSH SQLPVG TG NK	540
541	RPGDPKHSSQ TSNLAHKTY S LSSSFSSSSS TRKRG PSEET GGAVFDHPAK IAKSTKSSSL	600
601	NFSFPLPTM GQMPGHSSDT SGLSFSQPSC KTRVPHSKLD KGPTGANGHN TTQTIDYQDT	660
661	VNMLHLLSA QGVQPTQPTA FEFVRPYS DY LNPRSGGIS RSGNTDKPRP PPLPSEPPP	720
721	LPPLPK	780

blue: CycT1 sequence expressed in recombinant protein

<sup>1</sup>[NCBI/Protein](https://www.ncbi.nlm.nih.gov/protein/NP_001231.2) accession number NP\_001231.2