

## ProQinase™ CDC7/DBF4

cell division cycle 7

Recombinant Human Active Protein Kinase

HGNC Symbol: CDC7

**Synonyms:** CDC7L1, HsCdc7, HsCDC7, Hsk1, huCdc7

**Product No.:** 1513-1516-1

**Lot:** 006

**Description:** Human CDC7 amino acids M<sub>1</sub>-L<sub>574</sub> (as in [NCBI/Protein](#) entry NP\_003494.1) N-terminal GST-HIS<sub>6</sub> fusion protein with a 3C cleavage site and DBF4, amino acids M<sub>1</sub>-F<sub>674</sub> (as in [NCBI/Protein](#) entry NP\_006707.1), N-terminal GST-HIS<sub>6</sub> fusion protein with a 3C cleavage site, coexpressed in Sf9 insect cells

**Product identity:** CDC7/DBF4 Lot 006, was confirmed as CDC7/DBF4 by mass spectroscopy LC-ESI-MS/MS

**Theoretical MW<sub>GST-CDC7</sub>:** 91,978 Da

**Theoretical MW<sub>GST-DBF4</sub>:** 104,938 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:** 0.197 µg/µl

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

**Biochemical Parameters:**

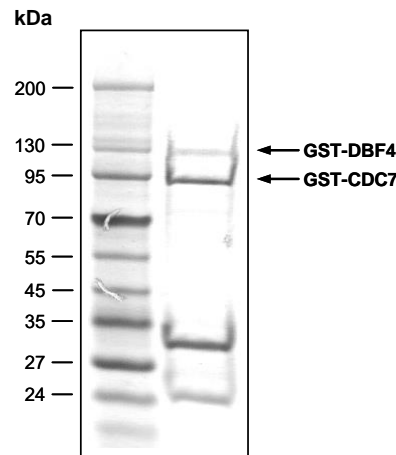
Specific kinase activity (P<sub>i</sub> transfer): 1.8 pmol/µg × min

ATP-K<sub>M</sub>: 0.04 µM

**Additional assay technology:**

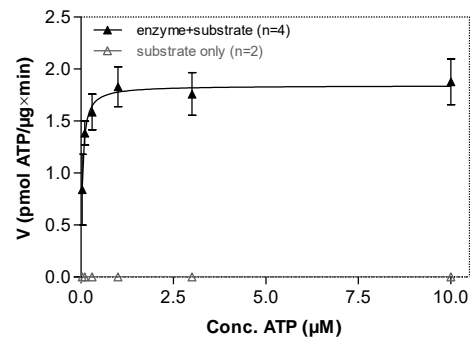
CDC7/DBF4 Lot 006 was also successfully tested by Reaction Biology for the use with the ADP-Glo™ Kinase assay from Promega ADP-Glo assay conditions may vary from radiometric assay conditions, please inquire for assay details

**CDC7/DBF4 Lot 006:**  
Coomassie stain



2.0 µg GST-CDC7/DBF4

**CDC7/DBF4 Lot 006:**  
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: Histone H1, 20 µg/ml
  - CDC7/DBF4: 2 µg/ml
- Filter binding assay
- MSFC membrane (Millipore)

## ProQinase™ CDC7/DBF4

Product No.: 1513-1516-1

GST-CDC7 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	KMFKDRLCHK	TYLNGDHVTH	PDFMLYDALD	VVLYMDPMCL	DAFPKLVCFK	180
181	KRIEAI PQID	KYLKSSKYIA	WPLQGWQATF	GGGDHPPKSD	PMGHHHHHG	RDSLEVL FQG	240
241	MEASLGIQM	DEPMAFSPQR	DRFOAEGSLK	KNEQNFKLAG	VKKDIEKLYE	AVPQLSNVFK	300
301	IEDKIGEGTF	SSVYLATAQL	QVGPEEKIAL	KHLIPTSHPI	RIAAELQCLT	VAGGQDNVMG	360
361	VKYCFRKN DH	VVIAMPYLEH	ESFLDILNSL	SFQEVREYML	NLFKALKRIH	QFGIVHRDVK	420
421	PSNFLYNRRL	KKYALVDFGL	AQGTHDTKIE	LLKFVQSEAO	QERCSONKSH	IITGNKIPLS	480
481	GPVPKELDQQ	STTKASVKRP	YTNAQIQIKQ	GKDGKEG SVG	LSVQRSVFGE	RNFNIHSSIS	540
541	HESPAVKLMK	QSKTVDVLSR	KLATKKKAIS	TKVMNSAVMR	KTASSCPASL	TCDCYATDKV	600
601	CSICLSRRQQ	VAPRAGTPGF	RAPEVLTKCP	NQTTAIDMWS	AGVIFLSLLS	GRYPFYKASD	660
661	DLTALAQIMT	IRGSRETIQA	AKTFGKSILC	SKEVPAQDLR	KLCERLRGMD	SSTPKLTSDI	720
721	QGHASHQPAI	SEKTDHKASC	LVQTPPGQYS	GNSFKKGDSN	SCEHC FDEYN	TNLEGWNEVP	780
781	DEAYDLLDKL	LDLNPASRIT	AEALLHPFF	KDMSL			840

1-218: GST Red: HIS6-tag Green: 3C cleavage site blue: CDC7

CDC7 wt <sup>1</sup> Amino Acid Sequence							
1	MEASLGIQMD	EPMAFSPQRD	RFQAEGLSK	NEQNFKLAGV	KKDIEKLYEA	VPQLSNVFKI	60
61	EDKIGEGTFS	SVYLATAQLQ	VGPEEKIALK	HLIPTSHPIR	IAAELQCLTV	AGGQDNVMGV	120
121	KYCFRKN DHV	VIAMPYLEHE	SFLDILNSLS	FQEVREYMLN	LFKALKRIHQ	FGIVHRDVKP	180
181	SNFLYNRRLK	KYALVDFGLA	QGTHDTKIEL	LKFVQSEAOQ	ERCSONKSHI	ITGNKIPLSG	240
241	PVPKELDQQS	TTKASVKRPY	TNAQIQIKQG	KDGKEG SVGL	SVQRSVFGER	NFNIHSSISH	300
301	ESPAVKLMKQ	SKTVDVLSRK	LATKKKAIST	KVMNSAVMRK	TASSCPASLT	CDCYATDKVC	360
361	SICLSRRQQV	APRAGTPGFR	APEVLTKCPN	QTTAIDMWSA	GVIFLSLLSG	RYPFYKASDD	420
421	LTALAQIMTI	RGSRETIQAA	KTFGKSILCS	KEVPAQDLRK	LCERLRGMDS	STPKLTSDIQ	480
481	GHASHQPAIS	EKTDHKASCL	VQTPPGQYSG	NSFKKGDSNS	CEHC FDEYNT	NLEGWNEVPD	540
541	EAYDLLDKLL	DLNPASRITA	EEALLHPFFK	DMSL			600

blue: CDC7 sequence expressed in recombinant protein

<sup>1</sup>[NCBI/Protein](#) accession number NP\_003494.1

**GST-DBF4 Recombinant Fusion Protein Amino Acid Sequence**

1	MSPILGYWKI	KGLVQPTRL	LEYLEEKYEE	HLIERDEGDK	WRNKKFELGL	EFPNLPYYID	60
61	GDVKLTQSMA	IIRYIADKHN	MLGGCPKERA	EISMLEGAVL	DIRYGVSRIA	YSKDFETLKV	120
121	DFLSKLPPEML	KMFEDRLCHK	TYLNGDHVTH	PDFMLYDALD	VVLYMDPMCL	DAFPKLVCFK	180
181	KRIEAIQID	KYLKSSKYIA	WPLQGWQATF	GGGDHPPKSD	PMGHHHHHGG	RDSLEVLFOG	240
241	MNSGAMRIH	SKGHFQGGIQ	VKNEKNRPSL	KSLKTDNRPE	KSKCKPLWKG	VFYLDLPSVT	300
301	ISEKLQKDIK	DLGGRVEEFL	SKDISYLISN	KKEAKFAQTL	GRISPVPSPE	SAYTAETTSP	360
361	HPSHDGSSFK	SPDTVCLSRG	KLLVEKAIKD	HDFIPNSIL	SNALSWGSKI	LHIDDIRYI	420
421	EQKKKELYLL	KKSSTSVRDG	GKRVGSGAQK	TRTGRLKKPF	VKVEDMSQLY	RPFYLQLTNM	480
481	PFINYSIQKP	CSPFDVDPKS	SMQKQTQVKL	RIQTDGDKYG	GTSIQLQLKE	KKKKGycecc	540
541	LQKYEDLETH	LLSEQHRNFA	QSNQYQVDD	IVSKLVDFV	EYEKDTPKKK	RIKYSVGSLS	600
601	PVSASVLKKT	EQKEKVELQH	ISQKDCQEDD	TVKEQNFLY	KETQETEKKL	LFISEPIHP	660
661	SNELRGLNEK	MSNKCMLST	AEDDIRQNTQ	QLPLHKNQEC	CILDISEHTL	SENDLEELRV	720
721	DHYKCNIQAS	VHVSDFSTDN	SGSQPKQKSD	TVLFPAKDLK	EKDLHSIFTH	DSGLITINSS	780
781	QEHLTVQAKA	PFHTPPEEPN	ECDFKNMDSL	PSGKIHRKVK	IILGRNRKEN	LEPNAEFDKR	840
841	TEFITQEENR	ICSSPVQSL	DLFQTSEEKS	EFLGFTSYTE	KSGICNVLDI	WEEENSNDLL	900
901	TAFFSSPSTS	TFTGF					960

1-218: GST Red: HIS6-tag Green: 3C cleavage site blue: DBF4 boxed: variation from RefSeq

**DBF4 wt<sup>2</sup> Amino Acid Sequence**

1	MNSGAMRIHS	KGHFQGGIQV	KNEKNRPSLK	SLKTDNRPEK	SKCKPLWGV	FYLDLPSVTI	60
61	SEKLQKDIKD	LGGRVEEFLS	KDISYLISNK	KEAKFAQTLG	RISPVPSPE	AYTAETTSPH	120
121	PSHDGSSFKS	PDTVCLSRGK	LLVEKAIKDH	DFIPNSILS	NALSWGKIL	HIDDIRYIE	180
181	QKKKELYLLK	KSSTSVRDGG	KRVGSGAQKT	RTGRLKKPFV	KVEDMSQLYR	PFYQLTNMP	240
241	FINYSIQKPC	SPFDVDPKSS	MQKQTQVKLR	IQTDGDKYGG	TSIQLQLKEK	KKKGYCECCL	300
301	QKYEDLETHL	LSEQHRNFAQ	SNQYQVDDI	VSKLVDFVE	YEKDTPKKKR	IKYSVGSLS	360
361	VSASVLKYTE	QKEKVELQHI	SQKDCQEDDT	TVKEQNFLYK	ETQETEKLL	FISEPIPHPS	420
421	NELRGLNEKM	SNKCMLSTA	EDDIRQNTQ	LPLHKNQEC	ILDISEHTLS	ENDLEELRVD	480
481	HYKCNIQASV	HVSDFSTDNS	GSQPKQKSDT	VLFPKDLKE	KDLHSIFTHD	SGLITINSSQ	540
541	EHLTVQAKAP	FHTPPEEPNE	CDFKNMDSL	SGKIHRKVKI	IILGRNRKENL	EPNAEFDKRT	600
601	EFITQEENRI	CSSPVQSLLD	LFQTSEEKSE	FLGFTSYTEK	SGICNVLDIW	EEENSNDLLT	660
661	AFFSSPSTST	FTGF					720

blue: DBF4 sequence expressed in recombinant protein Red: variant in recombinant protein

<sup>2</sup>NCBI/Protein accession number NP\_006707.1