

NEK1

NIMA related kinase 1

Recombinant Human Active Protein Kinase

HGNC Symbol: NEK1

Synonyms: NY-REN-55

Product No.: 0844-0000-1

Lot: 004

Description: Human NEK1, N-terminal fragment, amino acids M₁-K₅₀₅ (as in [NCBI/Protein](#) entry NP_036356.1), N-terminal GST-HIS₆ fusion protein with a 3C cleavage site, expressed in Sf9 insect cells

Product identity: NEK1 Lot 004, was confirmed as NEK1 by mass spectroscopy LC-ESI-MS/MS

Theoretical MW_{Fusion Protein}: 86,316 Da

Expression host: Sf9 insect cells

Purification: GST-Affinity Chromatography

Activation: in vitro auto activation

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: 0.253 µg/µl

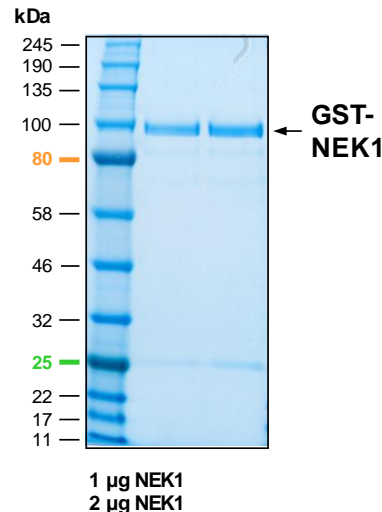
(Bradford method using BSA [Sigma, cat# A-7638, Lot 79H7641] as standard protein)

Biochemical Parameters:

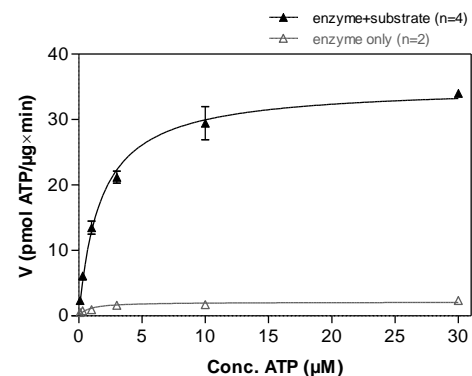
Specific kinase activity (P_i transfer): 35 pmol/µg × min

ATP-K_M: 1.7 µM

NEK1 Lot 004: Coomassie stain



NEK1 Lot 004: 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: RBER-GSK3 40 µg/ml
 - Kinase: 0.5 µg/ml
- Filter binding assay
- MSFC membrane (Millipore)

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GST-NEK1 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	PMG HHHHHG	RDS LEVLFGQ	240
241	PLAMVMEKYV	RLQKIGESF	GKAILVKSTE	DGRQYVIKEI	NISMSSKER	EESRREVAVL	300
301	ANMKHPNIVQ	YRESFEENG	LYIVMDYCEG	GDLFKRINAQ	KGVLQEDQI	LDWVQICLA	360
361	LKHVHDRKIL	HRDIKSONIF	LTKDGTVOLG	DFGIARVLNS	TVELARTCIG	TPYLSPEIC	420
421	ENKPYNNKSD	IWALGCVLYE	LCTLKHAFEA	GSMKNLVLKI	ISGSFPPVSL	HYSYDLRSLV	480
481	SQLFKRNPRD	RPSVNSILEK	GFIAKRIEKF	LSPQLIAEEF	CLKTFSKFGS	QPIPAKRPAS	540
541	GQNSISVMPA	QKITKPAKY	GIPLAYKYG	DKKLHEKKPL	QKHQAHTP	EKRVTGEER	600
600	RKISEEAARK	RRLEFIEKEK	KQKQIISLM	KAEQMKRQEK	ERLERINRAR	EQGWRNVLSA	660
661	GGSGEVKAPF	LGSGGTIAPS	SFSSRGYEH	YHAIFDQMQQ	QRAEDNEAKW	KREIYGRGLP	720
721	ERGILPGVRP	GFPYGAAGHH	HFPDADDIRK				780

1-218: GST **Red**: HIS6-tag **Green**: 3C cleavage site **blue**: NEK1 fragment

NEK1 wt ¹ Amino Acid Sequence							
1	MEKYVRLQKI	GEFSFGKAIL	VKSTEDGRQY	VIKEINISRM	SSKERESRR	EVAVLANMKH	60
61	PNIVQYRESF	EENGSLYIVM	DYCEGGDLFK	RINAQKGVLF	QEDQILDWFV	QICLALKHVV	120
121	DRKILHRDIK	SNIFLTKDG	TVQLGDFGIA	RVLNSTVELA	RTCIGTPYYL	SPEICENKPY	180
181	NNKSDI WALG	CVLYELCTLK	HAFEAGSMKN	LVLKIIISGSF	PPVSLHYSYD	LRLSLSQLFK	240
241	RNPRDRPSVN	SILEKGFIAK	RIEKFLSPQL	IAEEFCLKTF	SKFGSQPIPA	KRPASGQNSI	300
301	SVMPAQKITK	PAAKYGIPLA	YKYGDKKLH	EKKPLQKHKQ	AHQTPEKRVN	TGEERRKISE	360
361	EAARKRRLEF	IEKEKKQKQDQ	IISLMKAEQM	KRQEKERLER	INRAREQGWR	NVLSAGGSGE	420
421	VKAPFLGSGG	TIAPSSFSSR	GQYEHYHAIF	DOMQQORAE	NEAKWKREIY	GRGLPERGIL	480
481	PGVRPGFPYG	AAGHHFPA	DDIRKTLKRL	KAVSKQANAN	RQKQQLAVER	AKQVEEFLQR	540
541	KREAMQNKAR	AEGHMVYLAR	LRQIRLQNFN	ERQIKAKLR	GEKKEANHSE	GQEGSEEADM	600
600	RRKKIESLKA	HANARA AVLK	EQLERKRKEA	YEREKKVWEE	HLVAKGVKSS	DVSPPLGQHE	660
661	TGGSPSKQQM	RSVISVTSAL	KEVGVDSSLT	DTRETSEEMQ	KTNNAISSKR	EILRRLNENL	720
721	KAQEDEKQKQ	NLSDTFEINV	HEDAKEHEKE	KSVSSDRKKW	EAGGQLVIPL	DELTLDTFSF	780
781	TTERHTVGEV	IKLGPNGSPR	RAWGKSP TDS	VLKILGEAEL	QLQTELLENT	TIRSEISPEG	840
841	EKYKPLITGE	KKVQCISHEI	NPSAIVDSPV	ETKSPEFSEA	SPQMSLKLEG	NLEEPD DLET	900
901	EILQEPSGTN	KDESLPCTIT	DVWISSEKET	KETQSADRIT	IQENEVSEEDG	VSSTVDQLSD	960
961	IHIEPGT NDS	QHSKCDVDKS	VQPEPFFHKV	VHSEHLNLVP	QVQSVQCSPE	ESFAFRSHSH	1020
1021	LPPKNKNKNS	LLIGLSTGLF	DANNPKMLRT	CSLPDLSKLF	RTLMDVPTVG	DVRQDNLEID	1080
1081	EIEDENIKEG	PSDSEDIVFE	ETD TDLQELQ	ASMEQLLREQ	PGE EYSEEEE	SVLKNSDVEP	1140
1141	TANGTDVADE	DDNPSSSAL	NEEWHSDNSD	GEIASECED	SVFNHLEELR	LHLEQEMGFE	1200
1201	KFFEVEYKIK	AIHEDEDENI	EICSKIVQNI	LGNEHQHLYA	KILHLVMADG	AYQEDNDE	1260

blue: NEK1 sequence expressed in recombinant protein

¹[NCBI/Protein](#) accession number NP_036356.1

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