

## TTBK1 aa1-1321

tau tubulin kinase1

Recombinant Human Active Protein Kinase

HGNC Symbol: TTBK1

Synonyms: BDTK

Product No.: 1358-0000-1

Lot: 004

**Description:** Human TTBK1, full length, amino acids M<sub>1</sub>-R<sub>1321</sub> (as in [NCBI/Protein](#) entry NP\_115927.1), untagged, expressed in Sf9 insect cells

**Product identity:** TTBK1 Lot 004, was confirmed as TTBK1 by mass spectroscopy LC-ESI-MS/MS

**Theoretical MW<sub>Fusion Protein</sub>:** 142,891 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, 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:** 0.139 µg/µl

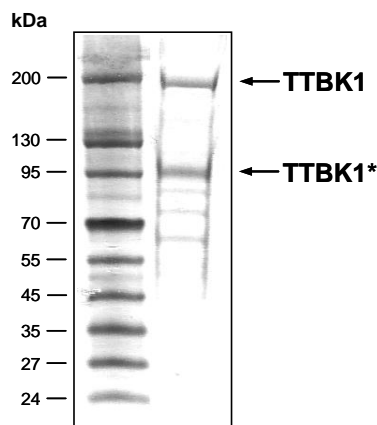
(Bradford method using BSA [Sigma, cat# A-7638, Lot 79H7641] as standard protein)

**Biochemical Parameters:**

Specific kinase activity (P<sub>i</sub> transfer): 14 pmol/µg × min

ATP-K<sub>M</sub>: 1 µM

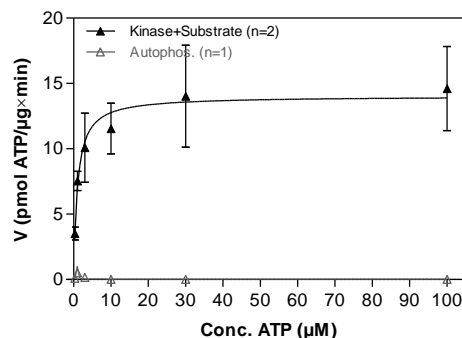
### TTBK1 Lot 004: Coomassie stain



2.0 µg TTBK1

\*Unusual running behaviour, with a proteolytic by-product of approx. 100 kDa previously described: Sato et al; "Tau-tubulin kinase 1 (TTBK1), a neuron-specific tau kinase candidate, is involved in tau phosphorylation and aggregation." J Neurochem. 2006 Sep;98(5):1573-84

### TTBK1 Lot 004: 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-GSK3, 40 µg/ml
  - TTBK1: 1 µg/ml
- Filter binding assay
- MSFC membrane (Millipore)

### Additional assay technology:

TTBK1 Lot 004 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

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# TTBK1 aa1-1321

Product No.: 1358-0000-1

GST-TTBK1 Recombinant Fusion Protein Amino Acid Sequence							
1	GPMQCLAAAL	KDETNSGGGG	EQADILPANY	VVKDRWKVLK	KIGGGGFGEI	YEAMDLLTRE	60
61	NVALKVESAQ	QPKQVLKMEV	AVLKKLQKGD	HVCRFIGCGR	NEKFNYVVMQ	LQGRNLADLR	120
121	RSQPRGFTTL	STTLRLGKQI	LESIEAIHSV	GFLHRDIKPS	NFAMGRLPST	YRKCYMLDFG	180
181	LARQYTNTTG	DVRPPRNVAG	FRGTVRYASV	NAHKNREMGR	HDDLWLSLFYM	LVEFAVGQLP	240
241	WRKIKDKKEQV	GMIKEKYEHR	MLLKHPSEF	HLFLDHIASL	DYFTKPDYQL	IMSVFENSMK	300
301	ERGIAENEAF	DWEKAGTDAL	LSTSTSTPPQ	QNTRQTAAMF	GVVNVTVPVG	DLLRENTEDV	360
361	LQGEHLSDQE	NAPPILPGRP	SEGLGPSPHL	VPHPGGPEAE	VWEETDVNRN	KLRINIGKSP	420
421	CVEEEQSRGM	GVPSSPVRAP	PDSPTTPVRS	LRYRRVNSPE	SERLSTADGR	VELPERRSRM	480
481	DLPGSPSRQA	CSSQPAQMLS	VDTGHADRQA	SGRMDVSASV	EQEALSNAFR	SVPLAEEDF	540
541	DSKEWVIDK	ETELKDFPPG	AEPSTSGTTD	EEPEELRPLP	EEGEERRRLG	AEPTVRPRGR	600
601	SMQALAEEDL	QHLPPQPLPP	QLSQGDGRSE	TSQPPTPGSP	SHSPLHSGPR	PRRRESDPGT	660
661	QVQVFSVAP	PFEVNGLPRA	VPLSLPYQDF	KRDLSDYRER	ARLLNRVRRV	GFSHMLLTTP	720
721	PLAPVSPQAN	ANGKEEEEEEE	EDEEEEEED	EEEEEEEEEE	EEEEEEEEEE	EEEEAAVAL	780
781	GEVLGPRSGS	SSEGSRSTD	RSQEGAPSTL	LADDQKESRG	RASMADGDLE	PEEGSKTLVL	840
841	VSPGDMKKSP	VTAELAPDPD	LGTLAALTPQ	HERPQPTGSQ	LDVSEPGTLS	SVLKSEPKPP	900
901	GPGAGLGAGT	VTTGVGGVAV	TSSPFTKVER	TFVHIAEKTH	LNVMSGGQA	LRSEEFSSAGG	960
961	ELGLELASDG	GAVEEGARAP	LENGLALSGL	NGAEIEGSAL	SGAPRETPSE	MATNSLPNGP	1020
1021	ALADGPPAPV	PLEPSPEKVA	TISPRRHAMP	GSRPRSRIPIV	LLSEEDTGSE	PSGSLSAKER	1080
1081	WSKRRAPQDS	LARLVMEKRG	GRLLRLASG	ASSSSSEEQR	RASELTSGTG	SEEDTPASEP	1140
1141	AAALPRKSGR	AAATRSRIPIR	PIGLRMPMPV	AAQQPASRSH	GAAPALDTAI	TSRLQLQTPP	1200
1201	GSATAADLRP	KQPPGRGLGP	GRAQAGARPP	APRSPRLPAS	TSAARNASAS	PRSQSLSRRE	1260
1261	SPPSPHQARP	GVPVPPRGVPP	ARAQPDGTPS	PGSKKGPGRG	KLQAQRATTK	GRAGGAEGRA	1320
1321	GAR						1380

1-2: legacy from tag-cleavage blue: TTBK1

TTBK1 wt <sup>1</sup> Amino Acid Sequence							
1	MQCLAAALKD	ETNSGGGGEQ	ADILPANYVV	KDRWKVLKKI	GGGGFGEIYE	AMDLLTRENV	60
61	ALKVESAQQP	KQVLKMEVAV	LKKLQKGDHV	CRFIGCGRNE	KFNYVVMQLQ	GRNLADLRRS	120
121	QPRGFTTLST	TLRLGKQILE	SIEAIHSVGF	LHRDIKPSNF	AMGRLPSTYR	KCYMLDFGLA	180
181	RQYTNTTGDV	RPPRNVAGFR	GTVRYASVNA	HKNREMGRHD	DLWLSLFYMLV	EFAVGQLPWR	240
241	KIKDKKEQVGM	IKEKYEHRML	LKHMPSEFHL	FLDHIASLDY	FTKPDYQLIM	SVFENSMKER	300
301	GIAENEAFDW	EKAGTDALLS	TSTSTPPQQN	TRQTAAMFGV	VNVTVPVGD	LRENTEDVLQ	360
361	GEHLSDQENA	PPILPGRPSE	GLGPSPHLVP	HPGGPEAEVW	EETDVNRNKL	RINIGKSPCV	420
421	EEEQSRGMGV	PSSPVRAPPD	SPTTPVRSRL	YRRVNSPESE	RLSTADGRVE	LPERRSRMDL	480
481	PGSPSRQACS	SQPAQMLSVD	TGHADRQASG	RMDVSASVEQ	EALSNAFRSV	PLAEEDFDS	540
541	KEWVIDKET	ELKDFPPGAE	PSTSGTTDEE	PEELRPLPEE	GEERRRLGAE	PTVRPRGRSM	600
601	QALAEEDLQH	LPPQPLPPQL	SQGDGRSETS	QPPTPGSPSH	SPLHSGPRPR	RRESDPGTGPQ	660
661	RQVFSVAPPF	EVNGLPRAVP	LSLPYQDFKR	DLSDYRERAR	LLNRVRRVGF	SHMLLTTPQV	720
721	PLAPVSPQAN	GKEEEEEEEE	DEEEEEDEE	EEEEEEEEEE	EEEEEEEEEE	EAAAVALGE	780
781	VLGPRSGSSS	EGSERSTDRS	QEGAPSTLLA	DDQKESRGRA	SMADGDLEPE	EGSKTLVLVS	840
841	PGDMKKSPVT	AELAPDPDLG	TLAALTPQHE	RPQPTGSQLD	VSEPGTLSSV	LKSEPKPPGP	900
901	GAGLGAGTVT	TGVGGVAVTS	SPFTKVERTF	VHIAEKTHLN	VMSSGGQALR	SEEFSSAGGEL	960
961	GLELASDGGG	VEEGARAPLE	NGLALSGLNG	AEIEGSALSG	APRETPSEMA	TNSLPNGPAL	1020
1021	ADGPAPVSPL	EPSPEKVATI	SPRRHAMPSG	RPRSRIPIVLL	SEEDTGSEPS	GSLSAKERWS	1080
1081	KRRAPQDRLA	RLVMEKRGQR	LLRLASGAS	SSSSEEQRA	SETLSGTGSE	EDTPASEPAA	1140
1141	ALPRKSGRAA	ATRSRIPIPI	GLRMPMPVAA	QQPASRSHGA	APALDTAITTS	RLQLQTPPGS	1200
1201	ATAADLRPKQ	PPGRGLGPGR	AQAGARPPAP	RSPRLPASTS	AARNASASPR	SQSLSRRESP	1260
1261	SPPSHQARPV	PPRGVPPPAR	AQPDGTPSPG	GSKKGPGRGL	QAQRATTKGR	AGGAEGRAGA	1320
1321	R						1380

blue: kinase sequence expressed in recombinant protein

<sup>1</sup>NCBI/Protein accession number NP\_115927.1

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