

## ProQinase™ AMPK-alpha1 aa1-312

protein kinase AMP-activated catalytic subunit alpha 1

Recombinant Human Active Protein Kinase

HGNC Symbol: PRKAA1

Synonyms: AAK1

Product No.: 0383-0000-1

Lot: 001

**Description:** Human AMPK-alpha1, N-terminal fragment, amino acids M1-C312 (as in [NCBI/Protein](#) entry NP\_006242.1), N-terminal GST-HIS6 fusion protein with a Thrombin cleavage site, expressed in Sf9 insect cells

**Product identity:** AMPK-alpha1 aa1-312 Lot 001, was confirmed as AMPK-alpha1 by mass spectroscopy LC-ESI-MS/MS

**Theoretical MW<sub>Fusion Protein</sub>:** 64,975 Da

**Expression host:** Sf9 insect cells

**Purification:** GST-Affinity Chromatography

**Activation:** This kinase was not activated by special procedures

**Storage buffer:** 50 mM TRIS-HCl pH 8.0, 100 mM NaCl, 5 mM DTT, 4 mM reduced glutathione, 20 % glycerol

**Storage temperature:** -80°C

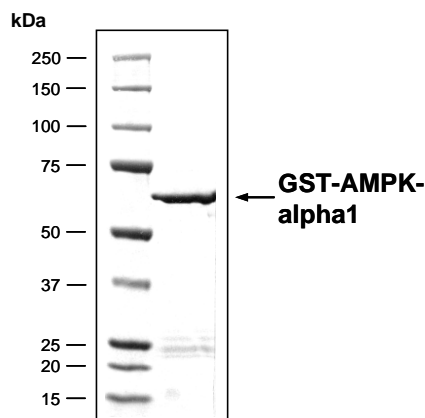
For complete recovery, mix well and spin before use. Product must not be stored in diluted solutions, aliquots below 10µl are not advisable. Avoid repeated freeze-thaw cycles!

**Protein concentration:** 0.687 µg/µl  
(Bradford method using BSA [Sigma, cat# A-7638, Lot 79H7641] as standard protein)

**Biochemical Parameters:**

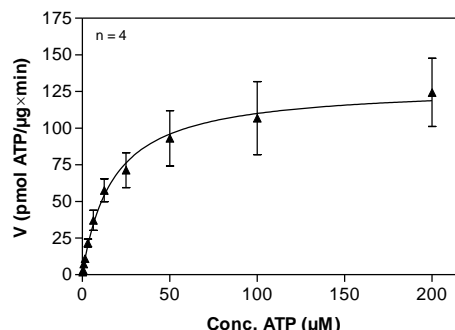
Specific kinase activity (P<sub>i</sub> transfer): 129 pmol/µg × min  
ATP-K<sub>M</sub>: 17 µM

**AMPK-alpha1 aa1-312 Lot 001:  
Coomassie stain**



2.0 µg GST-AMPK-alpha1

**AMPK-alpha1 aa1-312 Lot 001:  
Determination of V<sub>max</sub> and K<sub>M</sub> value for ATP**



- 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: GABRB2(427-439)tide 200 µg/ml  
Kinase: 4 µg/ml
- Filter binding assay  
MSPH membrane (Millipore)

## ProQinase™ AMPK-alpha1 aa1-312

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GST-AMPK-alpha1 aa1-312 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	KMFEDRLCHK	TYLNGDHVTH	PDFMLYDALD	VVLYMDPMCL	DAFPKLVCFK	180
181	KRIEAI PQID	KYLKSSKYIA	WPLQGWQATF	GGGDHPPKSD	PMGHHHHHG	RRRASVAAGI	240
241	LVPRGSPGLD	GICSRMATAE	KQKHDGRVKI	GHYILGDTLG	VGTFGKVKVG	KHELTGHKVA	300
301	VKILNRQKIR	SLDVVGKIRR	EIQNLKFRH	PHI IKLYQVI	STPSDIFVM	EYVSGGELEF	360
361	YICKNGRLDE	KESRRLFQQI	LSGVDYCHRH	MVVRDLKPE	NVLLDAH MNA	KIADFGLSNM	420
421	MSDGEFLR TS	CGSPNYAAPE	VISGRLYAGP	EVDIWS SGI	LYALLCGTLP	FDDDHVPTLF	480
481	KKICDGIFYT	PQYLNPSVIS	LLK HMLQVDP	MKRATIKDIR	EHEWFKQDLP	KYLFPEPDSY	540
541	SSTMIDDEAL	KEVCEKFECS	EEEVLS C				600

1-218: GST Red: HIS6-tag Pink: Thrombin cleavage site blue: AMPK-alpha1 fragment

AMPK-alpha1 wt <sup>1</sup> Amino Acid Sequence							
1	MATAEKQKHD	GRVKIGHYIL	GDTLGVGTFG	KVKVGKHELT	GHKVAVKILN	RQKIRSLDVV	60
61	GKIRREIQNL	KLFRHPHIK	LYQVISTPSD	IFMVMEYVSG	GELFDYICKN	GRLDEKESRR	120
121	LFQQILSGVD	YCHRHMVVHR	DLKPENVLLD	AHMNAKIADF	GLSNMMSDGE	FLRTSCGSPN	180
181	YAAPEVISGR	LYAGPEVDIW	SSGVILYALL	CGTLPFDDDH	VPTLFKKICD	GIFYTPQYLN	240
241	PSVISLLKHM	LQVDPMKRAS	IKDIREHEWF	KQDLPKYLFP	EDPSYSSTMI	DDEALKEVCE	300
301	KFECSEEEVL	SCLYNRNHQD	PLAVAYHLII	DNRRIMNEAK	DFYLATSPPD	SFLDDHHLTR	360
361	PHPERVPFLV	AETPRARHTL	DELNPQKSKH	QGVRKAKWHL	GIRSQSRPND	IMAEVCRAIK	420
421	QLDYEWKVVN	PYYLRVRRKN	PVTSTYSKMS	LQLYQVDSRT	YLLDFRSIDD	EITEAKSGTA	480
481	TPQRSGSVSN	YRSCQRSDSD	AEAQGSSEV	SLTSSVTSLD	SSPVDLTPRP	GSHTIEFFEM	540
541	CANLIKILAQ						600

blue: AMPK-alpha1 sequence expressed in recombinant protein

<sup>1</sup>NCBI/Protein accession number NP\_006242.1

Notice: more recent versions of the sequence (e.g. NP\_006242.5) list 559 aminoacids for AMPK-alpha1 (9 additional amino acids at the N-terminus (MRRLSSWRK))