

AMPK-alpha1 aa1-312

Protein kinase, AMP-activated, alpha 1 catalytic subunit

Recombinant Human Active Protein Kinase

HGNC Symbol: PRKAA1

Synonyms: PRKAA1, 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_{Fusion Protein}: 64,975 Da

Expression: Baculovirus infected Sf9 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

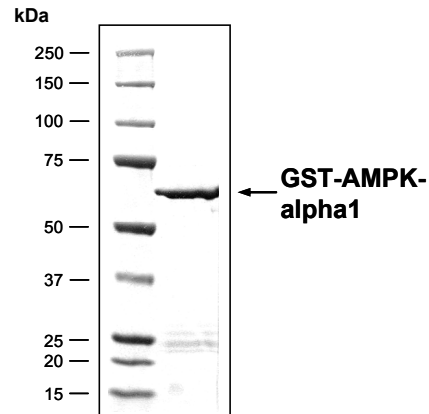
For complete recovery, mix well and spin before use. Product must not be stored in diluted solutions, aliquots below 10µl are not advisable. Avoid repeated freeze-thaw cycles!

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

Biochemical Parameters:

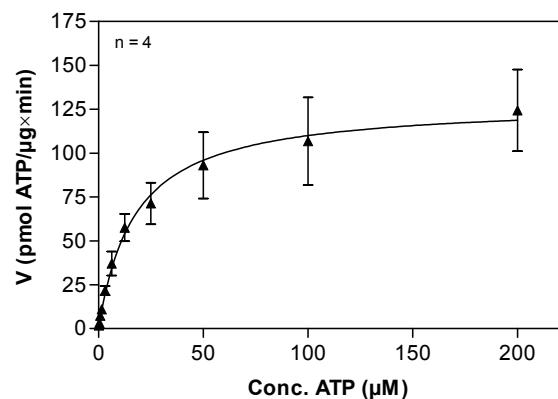
Specific kinase activity (P_i transfer): 129 pmol/µg×min
ATP-K_M: 17.2 µM

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



2.0 µg GST-AMPK-alpha1

**AMPK-alpha1 aa1-312 Lot 001:
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: GABA(A) receptor beta2 subunit (427-439) (SRLRRRASQLKIT), 200 µg / ml
 - AMPK-alpha1 aa1-312 Lot 001: 4.0 µg / ml
- Filter binding assay
 - MSPH membrane (Millipore)

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AMPK-alpha1 aa1-312

Product No.: 0383-0000-1

AMPK-alpha1 Recombinant Fusion Protein Amino Acid Sequence							
1	MSPILGYWKI	KGLVQPTRLL	LEYLEEKYEE	HLYERDEGDK	WRNKKFELGL	EFPNLPYYID	60
61	GDVKLTQ SMA	IIRYIADKHN	MLGGCPKERA	EISMLEGAVL	DIRYGVSRIA	YSKDFETLKV	120
121	DFLSKLPEML	KMFEDRLCHK	TYLNGDHVTH	PDFMLYDALD	VVLYMDPMCL	DAFPKLVCFK	180
181	KRIEAI PQID	KYLKSSKYIA	WPLQG WQATF	GGGDHPPKSD	PMGHHHHHGG	RRRASVAAGI	240
241	LVPRGSPGLD	GICSRMATAE	KQKHDGRVKI	GHYILGDTLG	VGTFGKVKVG	KHELTGHKVA	300
301	VKILNRQKIR	SLDVVGKIRR	EIQNLKLF RH	PHIIKLYQVI	STPSDIFMVM	EYVSGGELFD	360
361	YICKNGRLDE	KESRRLFQOI	LSGVDYCHRH	MVVHRDLKPE	NVLLDAH MNA	KIADFGLSNM	420
421	MSDGEFLRTS	CGSPNYAAPE	VISGRLYAGP	EVDIWSSGVI	LYALLCGTLP	FDDDHVPTLF	480
481	KKICDGIFYT	PQYLNP SVIS	LLKHM LQVDP	MKRATIKDIR	EHEWFKQDLP	KYLFPEDPSY	540
541	SSTMIDDEAL	KEVCEKFECS	EEEVLS C				600

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

AMPK-alpha1 wt ¹ Amino Acid Sequence							
1	MATAEKQKHD	GRVKIGHYIL	GDTLGVGTFG	KVKVGKHELT	GHKVAVKILN	RQKIRSLD VV	60
61	GKIRREIQNL	KLFRHPHIIK	LYQVISTPSD	IFMVMEYVSG	GELFDYICKN	GRLDEKESRR	120
121	LFQQILSGVD	YCHRHMVVHR	DLKPENVL LD	AHMNAKIADF	GLSNMMSDGE	FLRTSCGSPN	180
181	YAAPEVISGR	LYAGPEVDIW	SSGVILYALL	CGTLPFDDDH	VPTLFFKICD	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	SLTSSVTS LD	SSPVDLTPRP	GSHTIEFFEM	540
541	CANLIKILAQ						600

blue: AMPK-alpha1 sequence expressed in fusionprotein

¹NCBI/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))

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