

ProQinase™ AMPK-alpha1 aa1-550

protein kinase AMP-activated catalytic subunit alpha 1

Recombinant Human Active Protein Kinase

HGNC Symbol: PRKAA1

Synonyms: AAK1, AMPKa1

Product No.: 0289-0000-1

Lot: 001

Description: Human AMPK-alpha1, full length, amino acids M1-Q550 (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 aa1-550 Lot 001, was confirmed as AMPK-alpha1 by mass spectroscopy LC-ESI-MS/MS

Theoretical MW_{Fusion Protein}: 92,204 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: 0.144 µg/µl
(Bradford method using BSA [Sigma, cat# A-7638, Lot 79H7641] as standard protein)

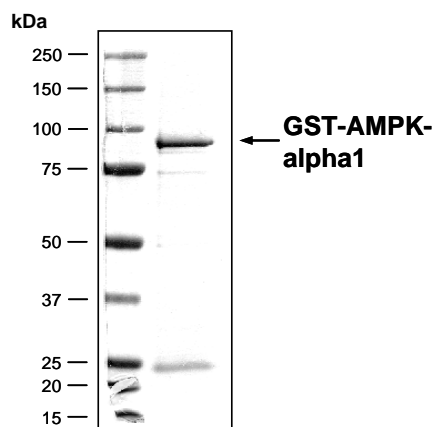
Biochemical Parameters:

Specific kinase activity (P_i transfer): 37 pmol/µg × min
ATP-K_M: 15 µM

Additional assay technology:

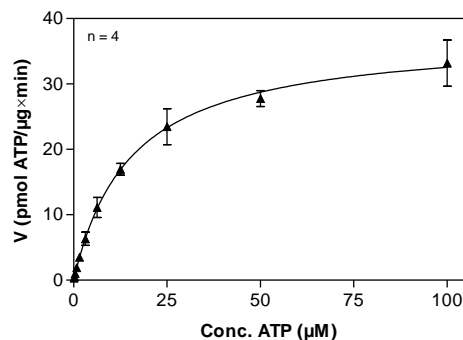
AMPK-alpha1 Lot 001 was also successfully tested by Reaction Biology for the use with the ADP-Glo™ Kinase assay from Promega ADP-Glo assay conditions may vary from radiometric assay conditions, please inquire for assay details

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



2.0 µg GST-AMPK-alpha1

**AMPK-alpha1 Lot 001:
Determination of V_{max} and K_M value for ATP**



- 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: GABRB2 derived peptide 200 µg/ml
Kinase: 4 µg/ml
- Filter binding assay
MSPH membrane (Millipore)

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GST-AMPK-alpha1 aa 1-550 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	WPLQGWAQTF	GGGDHPPKSD	PMG HHHHHG	RRRASVAAGI	240
241	LVPRGS PGLD	GICSR MATAE	KQKHDGRVKI	GHYILGDTLG	VGTFGKVKVG	KHELTGHKVA	300
301	VKILNRQKIR	SLDVVGKIR	EIQNLKLRH	PHIIKLYQVI	STPSDIFVM	EYVSGGELEF	360
361	YICKNGRLDE	KESRRLFQQI	LSGVDYCHRH	MVVHRDLKPE	NVLLDAHMNA	KIADFGLSNM	420
421	MSDGEFLRST	CGSPNYAAPE	VISGRLYAGP	EVDIWSGVI	LYALLCGTLP	FDDDHVPTLF	480
481	KKICDGIFYT	PQYLNPVIS	LLKHLQVDP	MKRATIKDIR	EHEWFKQDLP	KYLFPEPDSY	540
541	SSTMIDDEAL	KEVCEKFECS	EEEVLSCLYN	RNHQDPLAVA	YHLI IDNRRI	MNEAKDFYLA	600
601	TSPPDSFLDD	HHLTRPHER	VPFLVAETPR	ARHTLDELNP	QKSKHQGVRK	AKWHLGIRSQ	660
661	SRPNDIMAEV	CRAIKQLDYE	WV VVNPYYLR	VRKPNVTST	YSKMSLQLYQ	VDSRTYLLDF	720
721	RSIDDEITEA	KSGTATPQRS	GSVSNYRSCQ	RSDSDAEAQG	KSSEVSLTSS	VTSLDSSPVD	780
781	LTPRPGSHTI	EFFEMCANLI	KILAQ				840

1-218: GST **Red**: HIS6-tag **Pink**: Thrombin cleavage site **blue**: AMPK-alpha1 **boxed**: variation from RefSeq

AMPK-alpha1 wt ¹ Amino Acid Sequence							
1	MATAEKQKHD	GRVKIGHYIL	GDTLGVGTFG	KVKVGKHELT	GHKVAVKILN	RQKIRSLDVV	60
61	GKIRREIQNL	KLFRHPHIK	LYQVISTPSD	IFVMMEYVSG	GELFDYICKN	GRLDEKESRR	120
121	LFQQILSGVD	YCHRHMVVR	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	QGVKAKWHL	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 **Red**: variant in recombinant protein

¹[NCBI/Protein](#) accession number NP_006242.1

Notice: other versions of the sequence (e.g. NP_006242.5) list 559 aminoacids for AMPK-alpha1 (9 additional amino acids at the N-terminus (MRRLLSSWRK))