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Product datasheet for SC323523

AMPK alpha 2 (PRKAA2) (NM_006252) Human Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	AMPK alpha 2 (PRKAA2) (NM_006252) Human Untagged Clone
Tag:	Tag Free
Symbol:	AMPK alpha 2
Synonyms:	AMPK; AMPK2; AMPKa2; PRKAA
Mammalian Cell Selection:	None
Vector:	pCMV6-XL4
E. coli Selection:	Ampicillin (100 ug/mL)

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Fully Sequenced ORF:

>OriGene ORF within SC323523 sequence for NM_006252 edited (data generated by NextGen Sequencing)

ATGGCTGAGAAGCAGAAGCACGACGGGCGGGTGAAGATCGGACACTACGTGCTGGGCGAC
ACGCTGGGCGTCGGCACCTTCGGCAAAGTGAAGATTGGAGAACATCAATTAACAGGCCAT
AAAGTGGCAGTTATGATCTTAAATAGACAGAAGATTCGCAGTTTAGATGTTGTTGGAAAA
ATAAAACGAGAAATTCAAAATCTAAAACTCTTTCGTCATCCTCATATTATCAAACTATAC
CAGGTGATCAGCACTCCAACAGATTTTTTTATGGTAATGGAATATGTGTCTGGAGGTGAA
TTATTTGACTACATCTGTAAGCATGGACGGGTTGAAGAGATGGAAGCCAGGCGGCTCTTT
CAGCAGATTCTGTCTGCTGTGGATTACTGTCATAGGCATATGGTTGTTCATCGAGACCTG
AAACCAGAGAATGTCCTGTTGGATGCACACATGAATGCCAAGATAGCCGATTTCGGATTA
TCTAATATGATGTCAGATGGTGAATTTCTGAGAACTAGTTGCGGATCTCCAAATTATGCA
GCACCTGAAGTCATCTCAGGCAGATTGTATGCAGGTCCTGAAGTTGATATCTGGAGCTGT
GGTGTTATCTTGTATGCTCTTCTTTGTGGCACCCTCCCATTTGATGATGAGCATGTACCT
ACGTTATTTAAGAAGATCCGAGGGGGTGTCTTTTATATCCCAGAATATCTCAATCGTTCT
GTCGCCACTCTCCTGATGCATATGCTGCAGGTTGACCCACTGAAACGAGCAACTATCAAA
GACATAAGAGAGCATGAATGGTTTAAACAAGATTTGCCCAGTTACTTATTTCCTGAAGAC
CCTTCCTATGATGCTAACGTCATTGATGATGAGGCTGTGAAAGAAGTGTGTGAAAAATTT
GAATGTACAGAATCAGAAGTAATGAACAGTTTATATAGTGGTGACCCTCAAGACCAGCTT
GCAGTGGCTTATCATCTTATCATTGACAATCGGAGAATAATGAACCAAGCCAGTGAGTTC
TACCTCGCCTCTAGTCCTCCATCTGGTTCTTTTATGGATGATAGTGCCATGCATATTCCC
CCAGGCCTGAAACCTCATCCAGAAAGGATGCCACCTCTTATAGCAGACAGCCCCAAAGCA
AGATGTCCATTGGATGCACTGAATACGACTAAGCCCAAATCTTTAGCTGTGAAAAAAGCC
AAGTGGCATCTTGGAATCCGAAGTCAGAGCAAACCGTATGACATTATGGCTGAAGTTTAC
CGAGCTATGAAGCAGCTGGATTTTGAATGGAAGGTAGTGAATGCATACCATCTTCGTGTA
AGAAGAAAAAATCCAGTGACTGGCAATTACGTGAAAATGAGCTTACAACTTTACCTGGTT
GATAACAGGAGCTATCTTTTGGACTTTAAAAGCATTGATGATGAAGTAGTGGAGCAGAGA
TCTGGTTCCTCAACACCTCAGCGTTCCTGTTCTGCTGCTGGCTTACACAGACCAAGATCA
AGTTTTGATTCCACAACTGCAGAGAGCCATTCACTTTCTGGCTCTCTCACTGGCTCTTTG
ACCGGAAGCACATTGTCTTCAGTTTCACCTCGCCTGGGCAGTCACACCATGGATTTTTTT
GAAATGTGTGCCAGTCTGATTACTACTTTAGCCCGTTGA

Clone variation with respect to NM_006252.3
134 a=>t;135 a=>g

5' Read Nucleotide Sequence:

>OriGene 5' read for mutant NM_006252 unedited
ACGCCCGAACCGCAACGGGCGGAGGCGCGCACGGAGGGAGGACAACACAAGAGAGCCCGACAAGCGAACC
GACAGAAAAACGAAAAACGACACACCAAAGGGCGGCCGCGAACACGGCACGAGGCCGCGCGCGCCGAAGA
CGGCTGAGAAGCAGAAGCACGACGGGCGGGTGAAGACCGGACACTACGAGCTGGGCGACACGCTGGGCGT
CGGCACCTTCGGCAAAGTGAAGATTGGAGAACATCAATTTAACAGGCCATAAAGTGGCAGTTATGATTCT
TAAATAGACAGAAGATTCGCAGTTTTAGATGTTTGTTGGAAAAATAAAACGAGAAAATTCAAAATCTAAA
ACTCTTTCGTCATCCTCATATTTATCAACCTATTACCAGGGTGGATCCAGCACTTCCAACAAGATATTTT
TTTATTGGTTATGGGGAATATGTTGGTTCGGAGAGGTGGAAATATATTGGAACTACATCTCTGTAAGGCC
TGGGACACGGTTTTGAAAGAAAATGGGAACCAAGCCCGGCTTTTTTCGGAGAGATTCGGTTCGCGGTGGG
GATTTACGGGCATTAGAGCATATATGGGTTGGTTACTTCAGAACACTTGAAACCCAAAAAATGTCCTTTT
GGAAACGCACATGAAAGTGCCAGAAATGCCAGTTTTCAGTTTATCAAATTATAGTGAGAAAGGGAAATTT
TGAGAAACCGTTGTCGAGATTCTCCAATTTGGGCCACCTGTGAATATCTTCTGCGGCAATGTGTGCCCGT
GCTCCAAATTGATATATTGGGGGAGCGGGTGGGTATCATGTGTGACTCCCTCTCTCGTGGGGGCCCTCCC
TCACTTTGATGGATGAAGCACGTGTGCTACCGTCATTTTATGAAGATCCACCGGGTGTCTTTCTTATATC
TCCGCAAATCCCATCGTCTGTCGCACTCTCTCGAGCATATACTGCAGTTGTCCACTGAGCAGCGACCATC
TTAGACTATAGACGCATGTGTAACAGATGCGGTACTATTCGAGAACATCCTCGAGGCTAGCG

Kinase Domain Sequence:	>SC323523 kinase domain raw sequence. By performing BLASTX analysis with this sequence against NCBI refernce protein database, you can confirm the presence of the kinase-deficient mutation CYTTGMGCATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATATAAGCAGAGCTCGTTTAGTGAACCGTCA GAATTTTGTAATACGACTCACTATAGGGCGGCCGCGAATTCGGCACGAGGCCGCGCGCGCCGAAGATGGC TGAGAAGCAGAAGCACGACGGGCGGGTGAAGATCGGACACTACGTGCTGGGCGACACGCTGGGCGTCGGC ACCTTCGGCAAAGTGAAGATTGGAGAACATCAATTAACAGGCCAT
Restriction Sites:	Please inquire
ACCN:	NM_006252
Insert Size:	3000 bp
OTI Disclaimer:	Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at custsupport@origene.com or by calling 301.340.3188 option 3 for pricing and delivery. The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. More info
OTI Annotation:	This kinase-deficient mutant clone was generated by created by site-directed mutagenesis from the corresponding wild-type clone. See details in "Application of active and kinase-deficient kinome collection for identification of kinases regulating hedgehog signaling." Cell. 2008 May p536-548.
Components:	The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).
Reconstitution Method:	1. Centrifuge at 5,000xg for 5min. 2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA. 3. Close the tube and incubate for 10 minutes at room temperature. 4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom. 5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.
RefSeq:	NM_006252.2, NP_006243.2
RefSeq Size:	2435 bp
RefSeq ORF:	1659 bp
Locus ID:	5563

UniProt ID:	P54646
Cytogenetics:	1p32.2
Protein Families:	Druggable Genome, Protein Kinase
Protein Pathways:	Adipocytokine signaling pathway, Hypertrophic cardiomyopathy (HCM), Insulin signaling pathway, mTOR signaling pathway, Regulation of autophagy
Gene Summary:	The protein encoded by this gene is a catalytic subunit of the AMP-activated protein kinase (AMPK). AMPK is a heterotrimer consisting of an alpha catalytic subunit, and non-catalytic beta and gamma subunits. AMPK is an important energy-sensing enzyme that monitors cellular energy status. In response to cellular metabolic stresses, AMPK is activated, and thus phosphorylates and inactivates acetyl-CoA carboxylase (ACC) and beta-hydroxy beta-methylglutaryl-CoA reductase (HMGCR), key enzymes involved in regulating de novo biosynthesis of fatty acid and cholesterol. Studies of the mouse counterpart suggest that this catalytic subunit may control whole-body insulin sensitivity and is necessary for maintaining myocardial energy homeostasis during ischemia. [provided by RefSeq, Jul 2008]