

## Product datasheet for **SC308311**

### AMPK alpha 1 (PRKAA1) (NM\_206907) Human Untagged Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	AMPK alpha 1 (PRKAA1) (NM_206907) Human Untagged Clone
Tag:	Tag Free
Symbol:	AMPK alpha 1
Synonyms:	AMPK; AMPKa1; AMPK alpha 1
Mammalian Cell Selection:	None
Vector:	<u><a href="#">pCMV6-XL5</a></u>
E. coli Selection:	Ampicillin (100 ug/mL)



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**Fully Sequenced ORF:** >OriGene sequence for NM\_206907 edited  
 TTCGTATAGCATACATTATACGAAGTTATGGATCAGGCCAAATCGGCCGAGCTCGAATTC  
 GTCGAGAGCGGGATTCTCCTGGCAGCCCCCGCCCGCCAGGGGGAGCGTCTGCGCC  
 CGACGTAGGCTGCGGGGCTGGGCTGGCGGCGCAGGGCGGTGACTCGGCTCGGTGGCTGC  
 CCTCCCGCTCCCACCCCTCCCAGCCCGCCCGCGGGCCCTGCCGCCCTCCG  
 CCCCTCCCGCAGCGCCATGCGCAGACTCAGTTCTGGAGAAAGTTGGCGACAGCCGAGA  
 AGCAGAAAACACGACGGGCGGGTGAAGATCGGCCACTACATTCTGGGTGACACGCTGGGG  
 TCGGCACCTTCGGCAAAGTGAAGTTGGCAAACATGAATTGACTGGGCATAAAGTAGCTG  
 TGAAGATACTCAATCGACAGAAGATTTCGGAGCCTTGATGTGGTAGGAAAAATCCGCAGAG  
 AAATTCAGAACCTCAAGCTTTTCAGGCATCCTCATATAATTAAGTGTACCAGGTCATCA  
 GTACACCATCTGATATTTTCATGGTGATGGAATATGTCTCAGGAGGAGAGCTATTTGATT  
 ATATCTGTAAGAATGGAAGGAAATCTGATGTACCTGGAGTAGTAAAAACAGGCTCCACGA  
 AGGAGCTGGATGAAAAAGAAAGTCGGCGTCTGTTCCAACAGATCCTTTCTGGTGTGGATT  
 ATGTGCACAGGCATATGGTGGTCCATAGAGATTTGAAACCTGAAAATGTCCTGCTTGATG  
 CACACATGAATGCAAAGTAGCTGATTTTGGTCTTTCAAACATGATGTCAGATGGTGAAT  
 TTTAAGAACAAGTTGTGGCTCACCCAATATGCTGCACCAGAAGTAATTCAGGAAGAT  
 TGTATGCAGGCCAGAGGTAGATATATGGAGCAGTGGGGTTATTCTCTATGCTTTATTAT  
 GTGGAACCTTCCATTTGATGATGACCATGTGCCAACTTTTTAAGAAGATATGTGATG  
 GGTCTTCTATACCCCTCAATTTAAATCCTTCTGTGATTAGCCTTTTGAAACATATGC  
 TGCAGGTGGATCCCATGAAGAGGGCCACAATCAAAGATATCAGGGAACATGAATGGTTTA  
 AACAGGACCTTCCAAAATATCTCTTTCTGAGGATCCATCATATAGTTCAACCATGATTG  
 ATGATGAAGCCTTAAAAGAAGTATGTGAAAAGTTTGAGTGCTCAGAAGAGGAAGTTCTCA  
 GCTGTCTTTACAACAGAAATCACCAGGATCCTTTGGCAGTTGCCTACCATCTCATAATAG  
 ATAACAGGAGAATAATGAATGAAGCCAAAGATTTCTATTTGGCGACAAGCCACCTGATT  
 CTTTTCTTGATGATCATCACCTGACTCGGCCCATCCTGAAAGAGTACCATTCTTGGTTG  
 CTGAAACACCAAGGGCACGCCATACCCTTGATGAATTAATCCACAGAAATCCAAACACC  
 AAGGTGTAAGGAAAGCAAATGGCATTAGGAATTAGAAGTCAAAGTCGACCAAATGATA  
 TTATGGCAGAAGTATGTAGAGCAATCAAACAATTGGATTATGAATGGAAGTTGTAAACC  
 CATATTTTGGTGTACGAAGGAAGAATCCTGTGACAAGCACTACTCCAAAATGAGTC  
 TACAGTTATACCAAGTGATAGTAGAACTTATCTACTGGATTTCCGTAGTATTGATGATG  
 AAATTACAGAAGCCAAATCAGGGACTGCTACTCCACAGAGATCGGGATCAGTTAGCAACT  
 ATCGATCTTGCCAAAGGAGTGATTCAGATGCTGAGGCTCAAGGAAAATCCTCAGAAGTTT  
 CTCTTACCTCATCTGTGACCTCACTTGACTCTTCTCTGTTGACCTAACTCCAAGACCTG  
 GAAGTCACACAATAGAATTTTTTGAGATGTGTGCAAATCTAATTAATAATCTTGCACAAT  
 AAACAGAAAAAAAAAAAAAAAA

**Restriction Sites:** Please inquire  
**ACCN:** NM\_206907  
**Insert Size:** 2000 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](mailto: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:** The ORF of this clone has been fully sequenced and found to contain one SNP compared with NM\_206907.3.

**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\\_206907.2](#), [NP\\_996790.2](#)

**RefSeq Size:** 5138 bp

**RefSeq ORF:** 5130 bp

**Locus ID:** 5562

**UniProt ID:** [Q13131](#)

**Cytogenetics:** 5p13.1

**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 belongs to the ser/thr protein kinase family. It is the catalytic subunit of the 5'-prime-AMP-activated protein kinase (AMPK). AMPK is a cellular energy sensor conserved in all eukaryotic cells. The kinase activity of AMPK is activated by the stimuli that increase the cellular AMP/ATP ratio. AMPK regulates the activities of a number of key metabolic enzymes through phosphorylation. It protects cells from stresses that cause ATP depletion by switching off ATP-consuming biosynthetic pathways. Alternatively spliced transcript variants encoding distinct isoforms have been observed. [provided by RefSeq, Jul 2008]

Transcript Variant: This variant (2) encodes the longest isoform (2).