

## Product datasheet for **AP21012PU-M**

### AMPK alpha 1 (PRKAA1) Rabbit Polyclonal Antibody

#### Product data:

Product Type:	Primary Antibodies
Applications:	IHC
Recommended Dilution:	<b>Immunohistochemistry on paraffin sections</b> 1/50 - 1/200.
Reactivity:	Human, Mouse, Rat
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Synthetic peptide, corresponding to amino acids 470-520 of Human AMPK $\alpha$ 1.
Specificity:	This antibody detects endogenous levels of AMPK $\alpha$ 2 protein. The antibody does not cross-react with AMPK $\alpha$ 2. (region surrounding Arg493)
Formulation:	Phosphate buffered saline (PBS), pH 7.2. State: Aff - Purified State: Liquid purified Ig fraction Preservative: 0.05% Sodium Azide
Concentration:	1.0 mg/ml
Purification:	Affinity chromatography (> 95% (by SDS-PAGE)
Conjugation:	Unconjugated
Storage:	Store undiluted at 2-8°C for one month or (in aliquots) at -20°C for longer. Avoid repeated freezing and thawing.
Stability:	Shelf life: one year from despatch.
Predicted Protein Size:	~ 63 kDa
Gene Name:	protein kinase AMP-activated catalytic subunit alpha 1
Database Link:	<u><a href="#">Entrez Gene 65248 Rat</a></u> <u><a href="#">Entrez Gene 105787 Mouse</a></u> <u><a href="#">Entrez Gene 5562 Human Q13131</a></u>



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**Background:**

AMPK is a heterotrimeric complex comprising a catalytic alpha subunit and regulatory  $\beta$  and  $\gamma$  subunits. It protects cells from stresses that cause ATP depletion by switching off ATP-consuming biosynthetic pathways. AMPK is activated by high AMP and low ATP through a mechanism involving allosteric regulation, promotion of phosphorylation by an upstream protein kinase known as AMPK kinase, and inhibition of dephosphorylation. Activated AMPK can phosphorylate and regulate in vivo hydroxymethylglutaryl-CoA reductase and acetyl-CoA carboxylase, which are key regulatory enzymes of sterol synthesis and fatty acid synthesis, respectively. The human AMPKalpha1 and AMPKalpha2 genes encode 548 amino acid and 552 amino acid proteins, respectively. Human AMPKbeta1 encodes a 271 amino acid protein and human AMPKbeta2 encodes a 272 amino acid protein. The human AMPKgamma1 gene encodes a 331 amino acid protein. Human AMPKgamma2 and AMPKgamma3, which are 569 and 492 amino acid proteins, respectively, contain unique N-terminal domains and may participate directly in the binding of AMP within the AMPK complex.

**Synonyms:**

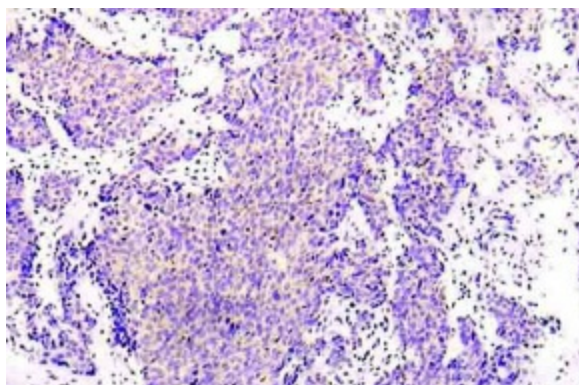
AMPK1, AMPK alpha-1 chain

**Protein Families:**

Druggable Genome, Protein Kinase

**Protein Pathways:**

Adipocytokine signaling pathway, Hypertrophic cardiomyopathy (HCM), Insulin signaling pathway, mTOR signaling pathway, Regulation of autophagy

**Product images:**


Immunohistochemistry (IHC) analysis of PRKAA1 antibody in paraffin-embedded human lung adenocarcinoma tissue.