

Product datasheet

Recombinant human AMPK alpha 1 + AMPK beta 2 + AMPK gamma 3 protein (Active) ab184885

2 Images

Description

Product name	Recombinant human AMPK alpha 1 + AMPK beta 2 + AMPK gamma 3 protein (Active)
Biological activity	The specific activity of ab184885 was determined to be 400 nmol/min/mg
Purity	> 80 % Densitometry. Affinity purified.
Expression system	Baculovirus infected Sf9 cells
Protein length	Full length protein
Animal free	No
Nature	Recombinant
Species	Human
Tags	His tag C-Terminus , proprietary tag N-Terminus
Additional sequence information	Recombinant full length AMPK alpha 1 (a.a's 1-559 of UniProt ID: Q13131) + AMPK beta 2 (a.a's 1-272 of UniProt ID: O43741) + AMPK gamma 3 (a.a.'s 1- 489 of UniProt ID:Q9UGI9). MWt 92, 62, and 108 KDa.

Specifications

Our **Abpromise guarantee** covers the use of **ab184885** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Applications	Functional Studies  SDS-PAGE  Western blot
Form	Liquid
Additional notes	Q13131 MRRLSSWRKMATAEKQKHDGRVKIGHYILGDTLGVGTFGKVKGKHELTGHKVAVKILNRQKIR SLDVVGKIRREIQNLKLFRRPHIIKLYQVISTPSDIFMVMEYVSGGELFDYICKNGRLDEKESRRLF QQILSGVDYCHRHMVVHRDLKPENVLLDAHMNAKIADFGLSNMMSDGEFLRTSCGSPNYAAP EVISGRLYAGPEVDIWSSGVILYALLCGTLPFDDDHVPTLFKKICDGIFYTPQYLNPSVISLLKHML QVDPMKRATIKDIREHEWFKQDLPKYLPEDPSYSSTMIDDEALKEVCEKFECSEEEVLSCLY NRNHQDPLAVAYHLIDNRRIMNEAKDFYLATSPPDSDLDDHHLTRPHERVPFLVAETPRARH

TLDELNPQKSKHQGVKAKWHLGIRSQSRPNDIMAEVCRAIKQLDYEWKVVNPYYLRVRRKNP  
VTSTYSKMSLQLYQVDSRTYLLDFRSIDDEITEAKSGTATPQRSGSVSNYRSCQRSDSDAEAQ  
GKSSEVSLTSSVTSLDSSPVDLTPRPGSHTIEFFEMCANLIKILAQ

O43741

MGNTTSDRVSGERHGAKAARSEGAGGHAPGKEHKIMVGSTDDPSVFSPLPDSKLPDGKEFVS  
WQQDLEDVSKPTQQARPTVIRWSEGGKEVFISGSFNNWSTKIPLIKSHNDFVAILDLPEGEHQY  
KFFVDGQWVHDPSEPVVTSQLGTINNLIHVKKSDFEVFDALKLDSMESSETSCRDLSSSPPG  
PYGQEMYAFRSEERFKSPPIPPHLLQVILNKDTNISCDPALLPEPNHVMLNHLIALSIKDSVMV  
LSATHRYKKKYVTLLYKPI

Q9UGI9

MEPGLEHALRRTPSWSSLGGSEHQEMSFLQENSSSWPSPAVTSSSERIRGKRRAKALRWT  
RQKSVEEGEPGQGEGRSRPAAESTGLEATFPKTTPLAQADPAGVGTPTGWDCLPSDCT  
ASAAGSSTDDVELATEFPATEAWECELEGLLEERPALCLSPQAPFPKLGWDELKPKGAQIY  
MRFMQEHTCYDAMATSSKLVIFDTMLEIKKAFFALVANGVRAAPLWDSKKQSFVGMILTITDFIL  
VLHRYRSPLVQYIEQHKIETWREYLQGCFFKPLVSISPNDLSFEAVYTLKNRIHRLPVLDPVS  
GNVLHILTHKRLLKFLHIFGSLLPRPSFLYRTIQDLGIGTFRDLAVVLETAPILTALDIFVDRRV  
PVVNECGQVVGLYSRFDVIHLAAQQTYNHLDMSVGEALRQRTLCEGLVLSQPHESLGEVIDR  
IAREQVHRLVLVDETQHLLGVVSLSDILQALVLS PAGIDALGA

**ab204881** (Acetyl Coenzyme A Carboxylase peptide) can be utilized as a substrate for assessing kinase activity

## Preparation and Storage

### Stability and Storage

Shipped on Dry Ice. Upon delivery aliquot. Store at -80°C. Avoid freeze / thaw cycle.

pH: 7.50

Constituents: 0.79% Tris HCl, 0.88% Sodium chloride, 0.31% Glutathione, 0.003% EDTA, 0.004% DTT, 0.002% PMSF, 25% Glycerol (glycerin, glycerine)

This product is an active protein and may elicit a biological response in vivo, handle with caution.

## General Info

### Relevance

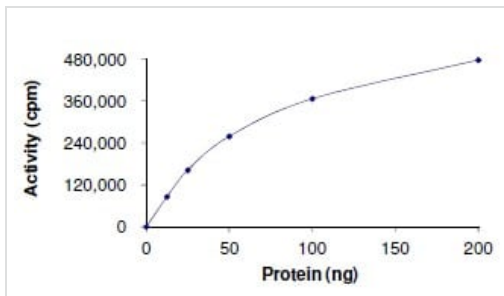
AMPK alpha 1: Responsible for the regulation of fatty acid synthesis by phosphorylation of acetyl-CoA carboxylase. It also regulates cholesterol synthesis via phosphorylation and inactivation of hormone-sensitive lipase and hydroxymethylglutaryl-CoA reductase. Appears to act as a metabolic stress-sensing protein kinase switching off biosynthetic pathways when cellular ATP levels are depleted and when 5'-AMP rises in response to fuel limitation and/or hypoxia. This is a catalytic subunit. AMPK beta 2: AMPK is responsible for the regulation of fatty acid synthesis by phosphorylation of acetyl-CoA carboxylase. Also regulates cholesterol synthesis via phosphorylation and inactivation of hydroxymethylglutaryl-CoA reductase and hormone-sensitive lipase. This is a regulatory subunit, may be a positive regulator of AMPK activity. It may also serve as an adapter molecule for the catalytic alpha-subunit. AMPK gamma 3: AMP/ATP-binding subunit of AMP-activated protein kinase (AMPK), an energy sensor protein kinase that plays a key role in regulating cellular energy metabolism. In response to reduction of intracellular ATP levels, AMPK activates energy-producing pathways and inhibits energy-consuming processes: inhibits protein, carbohydrate and lipid biosynthesis, as well as cell growth and proliferation. AMPK acts via direct phosphorylation of metabolic enzymes, and by longer-term effects via phosphorylation of transcription regulators. Also acts as a regulator of cellular polarity by remodeling the actin cytoskeleton; probably by indirectly activating myosin. Gamma non-catalytic

subunit mediates binding to AMP, ADP and ATP, leading to activate or inhibit AMPK: AMP-binding results in allosteric activation of alpha catalytic subunit (PRKAA1 or PRKAA2) both by inducing phosphorylation and preventing dephosphorylation of catalytic subunits. ADP also stimulates phosphorylation, without stimulating already phosphorylated catalytic subunit. ATP promotes dephosphorylation of catalytic subunit, rendering the AMPK enzyme inactive.

## Cellular localization

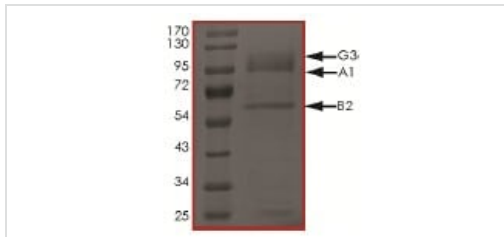
Cytoplasmic and Nuclear

## Images



Kinase Assay demonstrating specific activity of ab184885.

Functional Studies - Recombinant human AMPK alpha 1 + AMPK beta 2 + AMPK gamma 3 protein (Active) (ab184885)



SDS-PAGE showing ab184885, approx MW ~92 kDa (A1), ~62 kDa (B2) and ~108 kDa (G3).

SDS-PAGE - Recombinant human AMPK alpha 1 + AMPK beta 2 + AMPK gamma 3 protein (Active) (ab184885)

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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