

# AMPK $\beta$ 1 (N-18): sc-19132

## BACKGROUND

AMPK (for 5'-AMP-activated protein kinase) 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 AMPK $\alpha$ 1 and AMPK $\alpha$ 2 genes encode 548 amino acid and 552 amino acid proteins, respectively. Human AMPK- $\beta$ 1 encodes a 271 amino acid protein and human AMPK $\beta$ 2 encodes a 272 amino acid protein. The human AMPK $\gamma$ 1 gene encodes a 331 amino acid protein. Human AMPK $\gamma$ 2 and AMPK $\gamma$ 3, 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.

## CHROMOSOMAL LOCATION

Genetic locus: PRKAB1 (human) mapping to 12q24.23; Prkab1 (mouse) mapping to 5 F.

## SOURCE

AMPK $\beta$ 1 (N-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of AMPK $\beta$ 1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-19132 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

AMPK $\beta$ 1 (N-18) is recommended for detection of AMPK $\beta$ 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

AMPK $\beta$ 1 (N-18) is also recommended for detection of AMPK $\beta$ 1 in additional species, including equine and canine.

Suitable for use as control antibody for AMPK $\beta$ 1 siRNA (h): sc-38925, AMPK $\beta$ 1 siRNA (m): sc-38926, AMPK $\beta$ 1 shRNA Plasmid (h): sc-38925-SH, AMPK $\beta$ 1 shRNA Plasmid (m): sc-38926-SH, AMPK $\beta$ 1 shRNA (h) Lentiviral Particles: sc-38925-V and AMPK $\beta$ 1 shRNA (m) Lentiviral Particles: sc-38926-V.

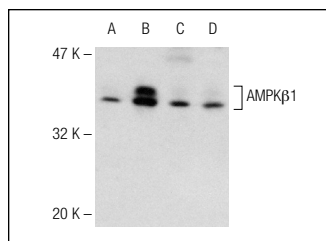
Molecular Weight of AMPK $\beta$ 1: 38 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, SW480 cell lysate: sc-2219 or T98G cell lysate: sc-2294.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



AMPK $\beta$ 1 (N-18): sc-19132. Western blot analysis of AMPK $\beta$ 1 expression in NIH/3T3 (A), SW480 (B), C6 (C) and T98G (D) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Pinter, K., et al. 2012. Subunit composition of AMPK trimers present in the cytokinetic apparatus: Implications for drug target identification. Cell Cycle 11: 917-921.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

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Try **AMPK $\beta$ 1 (Z14): sc-100357**, our highly recommended monoclonal alternative to AMPK $\beta$ 1 (N-18).