

AMPK γ 1 (T-20): sc-19138

BACKGROUND

AMPK (for 5'-AMP-activated protein kinase) is a heterotrimeric complex comprising a catalytic α subunit and regulatory β and γ 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 α 1 and AMPK α 2 genes encode 548 amino acid and 552 amino acid proteins, respectively. Human AMPK- β 1 encodes a 271 amino acid protein and human AMPK β 2 encodes a 272 amino acid protein. The human AMPK γ 1 gene encodes a 331 amino acid protein. Human AMPK γ 2 and AMPK γ 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: PRKAG1 (human) mapping to 12q13.12; Prkag1 (mouse) mapping to 15 F1.

SOURCE

AMPK γ 1 (T-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of AMPK γ 1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-19138 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

AMPK γ 1 (T-20) is recommended for detection of AMPK γ 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 γ 1 (T-20) is also recommended for detection of AMPK γ 1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for AMPK γ 1 siRNA (h): sc-38929, AMPK γ 1 siRNA (m): sc-38930, AMPK γ 1 shRNA Plasmid (h): sc-38929-SH, AMPK γ 1 shRNA Plasmid (m): sc-38930-SH, AMPK γ 1 shRNA (h) Lentiviral Particles: sc-38929-V and AMPK γ 1 shRNA (m) Lentiviral Particles: sc-38930-V.

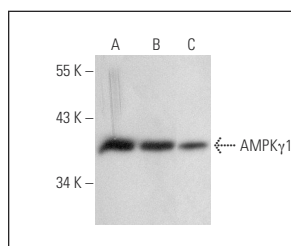
Molecular Weight of AMPK γ 1: 38 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-431 whole cell lysate: sc-2201 or HT-1080 whole cell lysate: sc-364183.

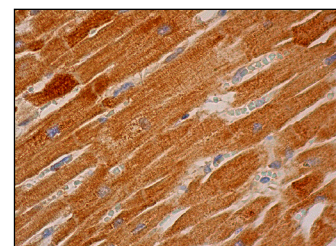
RECOMMENDED SECONDARY REAGENTS

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. 4) Immunohistochemistry: use ImmunoCruz[™]: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



AMPK γ 1 (T-20): sc-19138. Western blot analysis of AMPK γ 1 expression in HeLa (A), A-431 (B) and HT-1080 (C) whole cell lysates.



AMPK γ 1 (T-20): sc-19138. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

- Okoshi, R., et al. 2011. Expression of 5'-AMP-activated protein kinase with starvation in murine thymocytes. *Bull. Tokyo Dent. Coll.* 52: 21-29.
- 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 or our catalog for detailed protocols and support products.

MONOS
Satisfaction
Guaranteed

Try **AMPK γ 1/2/3 (H-9): sc-390579**, our highly recommended monoclonal alternative to AMPK γ 1 (T-20).