

AMPK β 2 (C-7): sc-376752

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.

REFERENCES

1. Stapleton, D., et al. 1996. Mammalian AMP-activated protein kinase subfamily. *J. Biol. Chem.* 271: 611-614.
2. Stapleton, D., et al. 1997. AMP-activated protein kinase isoenzyme family: subunit structure and chromosomal location. *FEBS Lett.* 409: 452-456.
3. Hardie, D.G., et al. 1997. The AMP-activated protein kinase—fuel gauge of the mammalian cell? *Eur. J. Biochem.* 246: 259-273.
4. Thornton, C., et al. 1998. Identification of a novel AMP-activated protein kinase β subunit isoform that is highly expressed in skeletal muscle. *J. Biol. Chem.* 273: 12443-12450.

CHROMOSOMAL LOCATION

Genetic locus: PRKAB2 (human) mapping to 1q21.1; Prkab2 (mouse) mapping to 3 F2.2.

SOURCE

AMPK β 2 (C-7) is a mouse monoclonal antibody raised against amino acids 1-75 mapping at the N-terminus of AMPK β 2 of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

AMPK β 2 (C-7) is available conjugated to agarose (sc-376752 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376752 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376752 PE), fluorescein (sc-376752 FITC), Alexa Fluor[®] 488 (sc-376752 AF488), Alexa Fluor[®] 546 (sc-376752 AF546), Alexa Fluor[®] 594 (sc-376752 AF594) or Alexa Fluor[®] 647 (sc-376752 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-376752 AF680) or Alexa Fluor[®] 790 (sc-376752 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

AMPK β 2 (C-7) is recommended for detection of AMPK β 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for AMPK β 2 siRNA (h): sc-38927, AMPK β 2 siRNA (m): sc-38928, AMPK β 2 shRNA Plasmid (h): sc-38927-SH, AMPK β 2 shRNA Plasmid (m): sc-38928-SH, AMPK β 2 shRNA (h) Lentiviral Particles: sc-38927-V and AMPK β 2 shRNA (m) Lentiviral Particles: sc-38928-V.

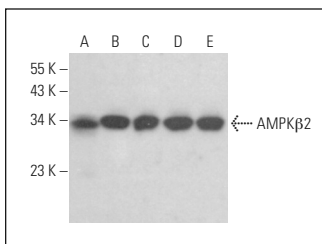
Molecular Weight of AMPK β 2: 30-34 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-375 cell lysate: sc-3811 or RT-4 whole cell lysate: sc-364257.

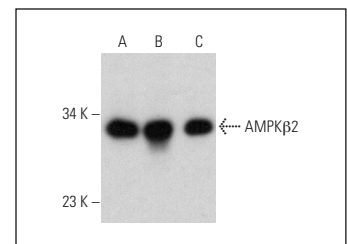
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 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 m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



AMPK β 2 (C-7): sc-376752. Western blot analysis of AMPK β 2 expression in RT-4 (A), SK-MEL-24 (B), U-2 OS (C), NTERA-2 cl.D1 (D) and Hep G2 (E) whole cell lysates.



AMPK β 2 (C-7): sc-376752. Western blot analysis of AMPK β 2 expression in HeLa (A), A-375 (B) and RT-4 (C) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Cheratta, A.R., et al. 2022. Caspase cleavage and nuclear retention of the energy sensor AMPK- α 1 during apoptosis. *Cell Rep.* 39: 110761.

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.