SANTA CRUZ BIOTECHNOLOGY, INC.

AMPKβ2 (362-7): sc-100358

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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* hydroxy-methylglutaryl-CoA reductase and acetyl-CoA carboxylase, which are key regulatory enzymes of sterol synthesis and fatty acid synthesis, respectively. The human AMPKα1 and AMPKα2 genes encode 548 amino acid and 552 amino acid proteins, respectively. Human AMPKβ1 encodes a 271 amino acid protein and human AMPKβ2 encodes a 272 amino acid protein. The human AMPKγ1 gene encodes a 331 amino acid protein. Human AMPKγ2 and AMPKγ3, 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.
5. Online Mendelian Inheritance in Man, OMIM™. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 602739. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Cheung, P.C., et al. 2000. Characterization of AMP-activated protein kinase γ subunit isoforms and their role in AMP binding. Biochem. J. 346: 659-669.

CHROMOSOMAL LOCATION

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

SOURCE

AMPKβ2 (362-7) is a mouse monoclonal antibody raised against recombinant AMPKβ2 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

AMPKβ2 (362-7) is recommended for detection of AMPKβ2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for AMPKβ2 siRNA (h): sc-38927, AMPKβ2 siRNA (m): sc-38928, AMPKβ2 shRNA Plasmid (h): sc-38927-SH, AMPKβ2 shRNA Plasmid (m): sc-38928-SH, AMPKβ2 shRNA (h) Lentiviral Particles: sc-38927-V and AMPKβ2 shRNA (m) Lentiviral Particles: sc-38928-V.

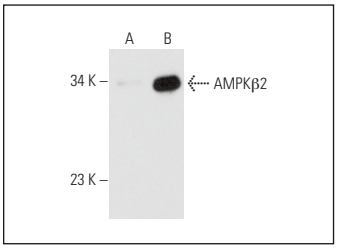
Molecular Weight of AMPKβ2: 30-34 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or AMPKβ2 (h): 293T Lysate: sc-116459.

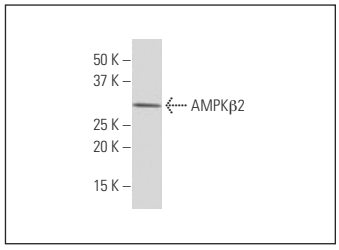
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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).

DATA



AMPKβ2 (362-7): sc-100358. Western blot analysis of AMPKβ2 expression in non-transfected: sc-117752 (**A**) and human AMPKβ2 transfected: sc-116459 (**B**) 293T whole cell lysates.



AMPKβ2 (362-7): sc-100358. Western blot analysis of AMPKβ2 expression in HeLa whole cell lysate.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.