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AMPK β 2 (h): 293T Lysate: sc-116459

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.
5. Online Mendelian Inheritance in Man, OMIMTM. 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.

PRODUCT

AMPK β 2 (h): 293T Lysate represents a lysate of human AMPK β 2 transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

STORAGE

Store at -20 $^{\circ}$ C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

APPLICATIONS

AMPK β 2 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive AMPK β 2 antibodies. Recommended use: 10-20 μ l per lane.

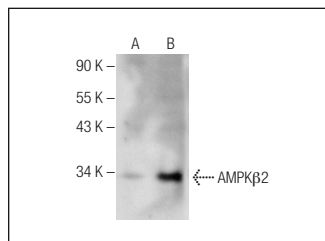
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

AMPK β 2 (F-8): sc-376897 is recommended as a positive control antibody for Western Blot analysis of enhanced human AMPK β 2 expression in AMPK β 2 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

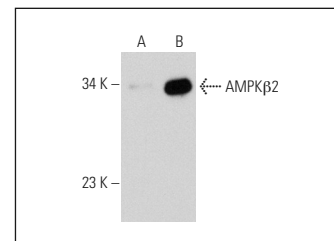
RECOMMENDED SUPPORT REAGENTS

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 MarkerTM Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



AMPK β 2 (F-8): sc-376897. Western blot analysis of AMPK β 2 expression in non-transfected: sc-117752 (A) and human AMPK β 2 transfected: sc-116459 (B) 293T whole cell lysates.



AMPK β 2 (362-7): sc-100358. Western blot analysis of AMPK β 2 expression in non-transfected: sc-117752 (A) and human AMPK β 2 transfected: sc-116459 (B) 293T whole cell lysates.

RESEARCH USE

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