

AMPK γ 2 (H-260): sc-20165

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, OMIM™. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 602739. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: PRKAG2 (human) mapping to 7q36.1; Prkag2 (mouse) mapping to 5 A3.

SOURCE

AMPK γ 2 (H-260) is a rabbit polyclonal antibody raised against amino acids 1-260 mapping at the N-terminus of AMPK γ 2 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.

STORAGE

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

APPLICATIONS

AMPK γ 2 (H-260) is recommended for detection of AMPK γ 2 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).

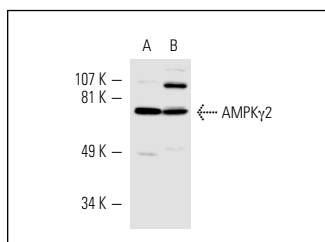
AMPK γ 2 (H-260) is also recommended for detection of AMPK γ 2 in additional species, including canine.

Suitable for use as control antibody for AMPK γ 2 siRNA (h): sc-38931, AMPK γ 2 siRNA (m): sc-38932, AMPK γ 2 shRNA Plasmid (h): sc-38931-SH, AMPK γ 2 shRNA Plasmid (m): sc-38932-SH, AMPK γ 2 shRNA (h) Lentiviral Particles: sc-38931-V and AMPK γ 2 shRNA (m) Lentiviral Particles: sc-38932-V.

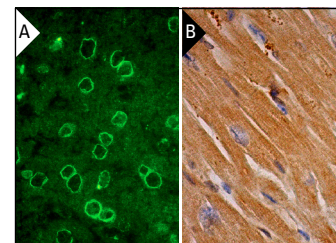
Molecular Weight of AMPK γ 2: 63 kDa.

Positive Controls: JAR cell lysate: sc-2276, C2C12 whole cell lysate: sc-364188 or HeLa whole cell lysate: sc-2200.

DATA



AMPK γ 2 (H-260): sc-20165. Western blot analysis of AMPK γ 2 expression in JAR (A) and C2C12 (B) whole cell lysates.



AMPK γ 2 (H-260): sc-20165. Immunofluorescence staining of normal mouse liver frozen section showing cytoplasmic and perinuclear staining (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes (B).

SELECT PRODUCT CITATIONS

1. Okoshi, R., et al. 2011. Expression of 5'-AMP-activated protein kinase with starvation in murine thymocytes. *Bull. Tokyo Dent. Coll.* 52: 21-29.
2. Merrill, J.F., et al. 2012. Iron deficiency causes a shift in AMP-activated protein kinase (AMPK) subunit composition in rat skeletal muscle. *Nutr. Metab.* 9: 104.

RESEARCH USE

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



Try **AMPK γ 2 (F-2): sc-398804**, our highly recommended monoclonal alternative to AMPK γ 2 (H-260).