SANTA CRUZ BIOTECHNOLOGY, INC.

AMPKγ2 (F-2): sc-398804

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.

CHROMOSOMAL LOCATION

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

SOURCE

AMPKγ2 (F-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 36-65 near the N-terminus of AMPKγ2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

AMPKγ2 (F-2) is available conjugated to agarose (sc-398804 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398804 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398804 PE), fluorescein (sc-398804 FITC), Alexa Fluor® 488 (sc-398804 AF488), Alexa Fluor® 546 (sc-398804 AF546), Alexa Fluor® 594 (sc-398804 AF594) or Alexa Fluor® 647 (sc-398804 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398804 AF680) or Alexa Fluor® 790 (sc-398804 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398804 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

AMPKγ2 (F-2) is recommended for detection of AMPKγ2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 AMPKγ2 siRNA (h): sc-38931, AMPKγ2 siRNA (m): sc-38932, AMPKγ2 shRNA Plasmid (h): sc-38931-SH, AMPKγ2 shRNA Plasmid (m): sc-38932-SH, AMPKγ2 shRNA (h) Lentiviral Particles: sc-38931-V and AMPKγ2 shRNA (m) Lentiviral Particles: sc-38932-V.

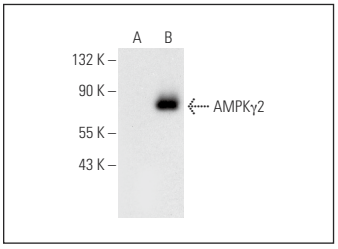
Molecular Weight of AMPKγ2: 63 kDa.

Positive Controls: AMPKγ2 (m): 293T Lysate: sc-118382.

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



AMPKγ2 (F-2): sc-398804. Western blot analysis of AMPKγ2 expression in non-transfected: sc-117752 (**A**) and mouse AMPKγ2 transfected: sc-118382 (**B**) whole cell lysates.

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 for detailed protocols and support products.