

AMPK α 2 (A-20): sc-19129

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.

CHROMOSOMAL LOCATION

Genetic locus: PRKAA2 (human) mapping to 1p32.2; Prkaa2 (mouse) mapping to 4 C6.

SOURCE

AMPK α 2 (A-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of AMPK α 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.

Blocking peptide available for competition studies, sc-19129 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

AMPK α 2 (A-20) is recommended for detection of AMPK α 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 α 2 (A-20) is also recommended for detection of AMPK α 2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for AMPK α 2 siRNA (h): sc-38923, AMPK α 2 siRNA (m): sc-38924, AMPK α 2 shRNA Plasmid (h): sc-38923-SH, AMPK α 2 shRNA Plasmid (m): sc-38924-SH, AMPK α 2 shRNA (h) Lentiviral Particles: sc-38923-V and AMPK α 2 shRNA (m) Lentiviral Particles: sc-38924-V.

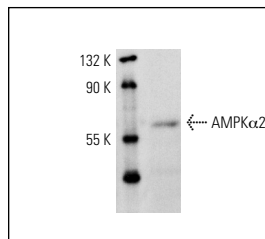
Molecular Weight of AMPK α 2: 63 kDa.

Positive Controls: mouse liver extract: sc-2256 or rat skeletal muscle extract: sc-364810.

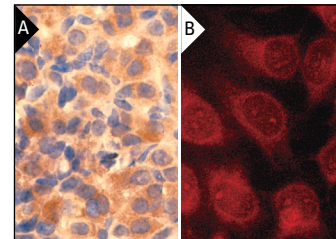
STORAGE

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

DATA



AMPK α 2 (A-20): sc-19129. Western blot analysis of AMPK α 2 expression in mouse liver extract.



AMPK α 2 (A-20): sc-19129. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse ovary tissue showing cytoplasmic localization (A) and immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (B).

SELECT PRODUCT CITATIONS

1. Sahra, I.B., et al. 2008. The antidiabetic drug metformin exerts an anti-tumoral effect *in vitro* and *in vivo* through a decrease of cyclin D1 level. *Oncogene* 27: 3576-3586.
2. Kothmaier, H., et al. 2008. EGFR and PDGFR differentially promote growth in malignant epithelioid mesothelioma of short and long term survivors. *Thorax* 63: 345-351.
3. Malvoisin, E., et al. 2009. Detection of AMP-activated protein kinase in human sera by immuno-isoelectric focusing. *J. Immunol. Methods* 351: 24-29.
4. Pinter, K., et al. 2012. Subunit composition of AMPK trimers present in the cytokinetic apparatus: Implications for drug target identification. *Cell Cycle* 11: 917-921.

RESEARCH USE

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

PROTOCOLS

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