

p-AMPK α 1/2 (Thr 172): sc-33524

BACKGROUND

5'-AMP-activated protein kinase, known as AMPK, is a heterotrimeric complex that comprises of a catalytic α subunit, and regulatory β and γ . AMPK protects cells from stresses that cause ATP depletion by switching off ATP-consuming biosynthetic pathways. AMPK is activated by high AMP and low ATP via a mechanism involving allosteric regulation, promotion of phosphorylation by an upstream protein kinase known as AMPK kinase (AMPKK), 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 gene maps to chromosome 5p13.1 and encodes a 548 amino acid protein. The major regulatory site phosphorylated by AMPKK on AMPK α has been identified as Thr 172 within the activation loop between the DFG and APE motifs of the α -subunits.

CHROMOSOMAL LOCATION

Genetic locus: PRKAA1 (human) mapping to 5p13.1, PRKAA2 (human) mapping to 1p32.2; Prkaa1 (mouse) mapping to 15 A1, Prkaa2 (mouse) mapping to 4 C6.

SOURCE

p-AMPK α 1/2 (Thr 172) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Thr 172 phosphorylated AMPK α 2 of human origin.

PRODUCT

Each vial contains 100 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-33524 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-AMPK α 1/2 (Thr 172) is recommended for detection of Thr 172 phosphorylated AMPK α 1 and α 2 isoforms of the catalytic subunit 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p-AMPK α 1/2 (Thr 172) is also recommended for detection of correspondingly phosphorylated AMPK α 1 and α 2 isoforms of the catalytic subunit in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for AMPK α 1/2 siRNA (h): sc-45312, AMPK α 1/2 siRNA (m): sc-45313, AMPK α 1/2 shRNA Plasmid (h): sc-45312-SH, AMPK α 1/2 shRNA Plasmid (m): sc-45313-SH, AMPK α 1/2 shRNA (h) Lentiviral Particles: sc-45312-V and AMPK α 1/2 shRNA (m) Lentiviral Particles: sc-45313-V.

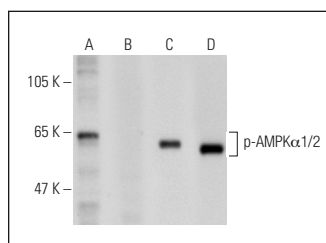
STORAGE

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.

DATA



Western blot analysis of AMPK α 1/2 phosphorylation in untreated (A,C) and lambda protein phosphatase treated (B,D) C2C12 whole cell lysates. Antibodies tested include p-AMPK α 1/2 (Thr 172): sc-33524 (A,B) and AMPK α 1 (71.54): sc-130394 (C,D).

SELECT PRODUCT CITATIONS

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