SANTA CRUZ BIOTECHNOLOGY, INC.

AMPD1 (T-13): sc-160043

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Adenosine monophosphate (AMP) deaminase is a cytosolic enzyme responsible for the hydrolytic deamination of AMP to inosine monophosphate (IMP) and NH3. AMP deaminase functions as a homotetramer and participates in the purine nucleotide cycle, playing an important role in energy metabolism. Three differentially expressed isozymes of AMP deaminase exist in mammals, namely AMPD1, AMPD2 and AMPD3, and they differ among their N-terminal domains while sharing a conserved C-terminal catalytic domain. AMPD1 is expressed in skeletal muscle; AMPD2 is found in undifferentiated myoblasts, smooth muscle, embryonic muscle and non-muscle tissue; and AMPD3 is expressed in erythrocytes. Defects in the AMPD1 gene result in adenosine monophosphate deaminase deficiency muscle type (AMPDDM). AMPDDM is a metabolic disorder resulting in exercise-related myopathy and is characterized by exercise-induced muscle aches, cramps and early fatigue.

REFERENCES

1. Mahnke-Zizelman, D.K., et al. 1996. Cloning, sequence and characterization of the human AMPD2 gene: evidence for transcriptional regulation by two closely spaced promoters. Biochim. Biophys. Acta 1308: 122-132.
2. Mahnke-Zizelman, D.K., et al. 1997. Regulation of rat AMP deaminase 3 (isoform C) by development and skeletal muscle fibre type. Biochem. J. 326: 521-529.
3. Mahnke-Zizelman, D.K. and Sabina, R.L. 2001. Localization of N-terminal sequences in human AMP deaminase isoforms that influence contractile protein binding. Biochem. Biophys. Res. Commun. 285: 489-495.
4. Haas, A.L. and Sabina, R.L. 2003. Expression, purification, and inhibition of *in vitro* proteolysis of human AMPD2 (isoform L) recombinant enzymes. Protein Expr. Purif. 27: 293-303.
5. Szydlowska, M., et al. 2004. Full-size form of human liver AMP-deaminase? Mol. Cell. Biochem. 266: 133-137.
6. Fischer, S., et al. 2005. Clinical significance and neuropathology of primary MADD in C34-T and G468-T mutations of the AMPD1 gene. Clin. Neuropathol. 24: 77-85.

CHROMOSOMAL LOCATION

Genetic locus: AMPD1 (human) mapping to 1p13.2; Ampd1 (mouse) mapping to 3 F2.2.

SOURCE

AMPD1 (T-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of AMPD1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-160043 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

AMPD1 (T-13) is recommended for detection of AMPD1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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); non cross-reactive with AMPD2 or AMPD3.

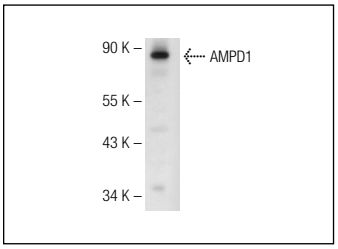
AMPD1 (T-13) is also recommended for detection of AMPD1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for AMPD1 siRNA (h): sc-78635, AMPD1 siRNA (m): sc-141052, AMPD1 shRNA Plasmid (h): sc-78635-SH, AMPD1 shRNA Plasmid (m): sc-141052-SH, AMPD1 shRNA (h) Lentiviral Particles: sc-78635-V and AMPD1 shRNA (m) Lentiviral Particles: sc-141052-V.

Molecular Weight of AMPD1: 86 kDa.

Positive Controls: rat skeletal muscle extract: sc-364810 or mouse skeletal muscle extract: sc-364250.

DATA



AMPD1 (T-13): sc-160043. Western blot analysis of AMPD1 expression in rat skeletal muscle tissue extract.

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 or our catalog for detailed protocols and support products.