SANTA CRUZ BIOTECHNOLOGY, INC.

AK1 (H-90): sc-28785

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Adenylate kinases 1-5 (designated AK1-5) are a set of enzymes that regulate the phosphorylation state of intracellular adenine nucleotides, which are the principle high-energy phosphoryl-carrying molecules in living cells. AKs influence metabolic signals, which include gene expression, ion channel activity and protein kinase-mediated signaling, by catalyzing phosphoryl transfer between adenine nucleotides (AMP, ADP, ATP). Inherited mutations leading to AK deficiencies in erythrocytes have been implicated in hemolytic anemia. Human AK1 is found in the cytosol of skeletal muscle, brain and erythrocytes and is clustered within myofibrils or bound to membranes. AK1-mediated phosphotransfer is essential for maintaining sufficient cellular energy, which enables proper skeletal muscle performance and metabolic activity.

CHROMOSOMAL LOCATION

Genetic locus: AK1 (human) mapping to 9q34.11; Ak1 (mouse) mapping to 2 B.

SOURCE

AK1 (H-90) is a rabbit polyclonal antibody raised against amino acids 105-194 mapping at the C-terminus of AK1 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.

APPLICATIONS

AK1 (H-90) is recommended for detection of AK1 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), 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).

AK1 (H-90) is also recommended for detection of AK1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for AK1 siRNA (h): sc-38904, AK1 siRNA (m): sc-38905, AK1 shRNA Plasmid (h): sc-38904-SH, AK1 shRNA Plasmid (m): sc-38905-SH, AK1 shRNA (h) Lentiviral Particles: sc-38904-V and AK1 shRNA (m) Lentiviral Particles: sc-38905-V.

Molecular Weight of AK1: 22 kDa.

Positive Controls: rat skeletal muscle extract: sc-364810, C6 whole cell lysate: sc-364373 and HeLa whole cell lysate: sc-2200.

RESEARCH USE

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

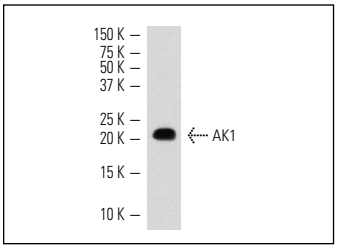
PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

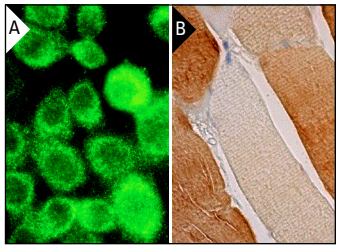
STORAGE

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

DATA



AK1 (H-90): sc-28785. Western blot analysis of AK1 expression in rat skeletal muscle tissue extract.



AK1 (H-90): sc-28785. Immunofluorescence staining of methanol-fixed L6 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of a subset of myocytes (**B**).

SELECT PRODUCT CITATIONS

1. Gruno, M., et al. 2006. Oxidative phosphorylation and its coupling to mitochondrial creatine and adenylate kinases in human gastric mucosa. Am. J. Physiol. Regul. Integr. Comp. Physiol. 291: R936-R946.
2. Eimre, M., et al. 2008. Distinct organization of energy metabolism in HL-1 cardiac cell line and cardiomyocytes. Biochim. Biophys. Acta 1777: 514-524.
3. Doran, P., et al. 2008. Opposite pathobiochemical fate of pyruvate kinase and adenylate kinase in aged rat skeletal muscle as revealed by proteomic DIGE analysis. Proteomics 8: 364-377.
4. Doran, P., et al. 2009. Proteomic profiling of antisense-induced exon skipping reveals reversal of pathobiochemical abnormalities in dystrophic mdx diaphragm. Proteomics 9: 671-685.