SANTA CRUZ BIOTECHNOLOGY, INC.

AK3 (C-19): sc-17626

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 AK3 is a 223 amino acid protein that is present in the mitochondria of liver and heart, and utilizes GTP as a substrate relative to isoforms AK1 and AK2, which use ATP.

REFERENCES

1. Shahjahan, M., et al. 1991. Cloning and characterization of the gene encoding bovine mitochondrial adenylate kinase isozyme 3. Gene 107: 313-317.
2. Xu, G., et al. 1992. Characterization of human adenylate kinase 3 (AK3) cDNA and mapping of the AK3 pseudogene to an intron of the NF1 gene. Genomics. 13: 537-542.
3. Barile, M., et al. 1994. Mechanisms of toxicity of 3'-azido-3'-deoxythymidine. Its interaction with adenylate kinase. Biochem. Pharmacol. 48: 1405-1412.
4. Dzeja, P.P., et al. 1998. Adenylate kinase: kinetic behavior in intact cells indicates it is integral to multiple cellular processes. Mol. Cell Biochem. 184: 169-182.
5. Online Mendelian Inheritance in Man, OMIM™. Johns Hopkins University, Baltimore, MD. MIM Number: 103000: 07/13/1999:. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Noma, T., et al. 1999. Characterization of the 5'-flanking region of the gene encoding bovine adenylate kinase isozyme 3. Biochim. Biophys. Acta. 1489: 383-388.
7. Noma, T., et al. 1999. Cloning and functional characterization of the promoter region of the gene encoding human adenylate kinase isozyme 3. Biochem. Biophys. Res. Commun. 264: 990-997.

SOURCE

AK3 (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of AK3 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-17626 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

AK3 (C-19) is recommended for detection of AK3 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).

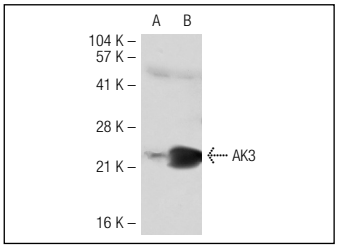
AK3 (C-19) is also recommended for detection of AK3 in additional species, including canine.

Suitable for use as control antibody for AK3 siRNA (h): sc-29656, AK3 siRNA (m): sc-29657, AK3 shRNA Plasmid (h): sc-29656-SH, AK3 shRNA Plasmid (m): sc-29657-SH, AK3 shRNA (h) Lentiviral Particles: sc-29656-V and AK3 shRNA (m) Lentiviral Particles: sc-29657-V.

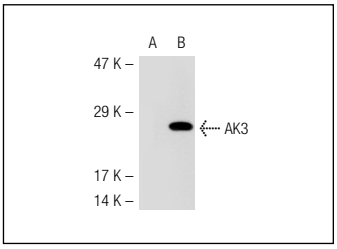
Molecular Weight of AK3: 25 kDa.

Positive Controls: AK3 (h): 293T Lysate: sc-113356, AK3 (m): 293T Lysate: sc-118302 or mouse heart extract: sc-2254.

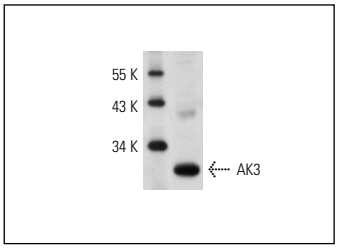
DATA



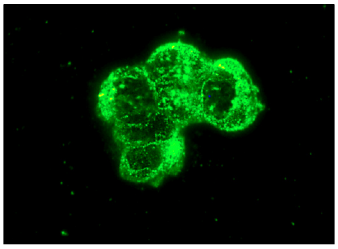
AK3 (C-19): sc-17626. Western blot analysis of AK3 expression in non-transfected: sc-117752 (**A**) and human AK3 transfected: sc-113356 (**B**) 293T whole cell lysates.



AK3 (C-19): sc-17626. Western blot analysis of AK3 expression in non-transfected: sc-117752 (**A**) and mouse AK3 transfected: sc-118302 (**B**) 293T whole cell lysates.



AK3 (C-19): sc-17626. Western blot analysis of AK3 expression in mouse heart extract.



AK3 (C-19): sc-17626. Immunofluorescence staining of methanol-fixed SK-N-MC cells showing cytoplasmic localization.

RESEARCH USE

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