

AK3 (m): 293T Lysate: sc-118302

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. By catalyzing phosphoryl transfer between adenine nucleotides (AMP, ADP, ATP), AKs influence metabolic signals, which include gene expression, ion channel activity and protein kinase-mediated signaling. 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. It utilizes GTP as a substrate relative to isoforms AK1 and AK2, which use ATP.

REFERENCES

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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.
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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. 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.
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7. Online Mendelian Inheritance in Man, OMIM™. 1999. Johns Hopkins University, Baltimore, MD. MIM Number: 103000. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
8. Carrasco, A.J., et al. 2001. Adenylate kinase phosphotransfer communicates cellular energetic signals to ATP-sensitive potassium channels. *Proc. Natl. Acad. Sci. USA* 98: 7623-7628.
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CHROMOSOMAL LOCATION

Genetic locus: Ak3 (mouse) mapping to 19 C1.

PRODUCT

AK3 (m): 293T Lysate represents a lysate of mouse AK3 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

AK3 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive AK3 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

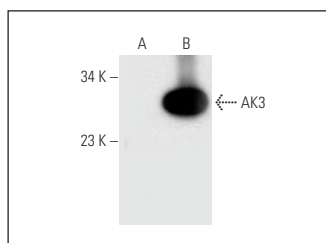
AK3 (E-5): sc-398571 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse AK3 expression in AK3 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:

- 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



AK3 (E-5): sc-398571. Western blot analysis of AK3 expression in non-transfected: sc-117752 (A) and mouse AK3 transfected: sc-118302 (B) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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