



AK2 (h): 293T Lysate: sc-111620

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. AK2 is found in the mitochondria of liver and heart tissues and is the only AK that localizes to the mitochondrial intermembrane space. In apoptotic cells, AK2 is the only AK that translocates into the cytosol concomitantly with cytochrome c, suggesting that only intermembrane proteins are released from mitochondria during the early stages of apoptosis.

REFERENCES

1. Bruns, G.A. and Regina, V.M. 1977. Adenylate kinase 2, a mitochondrial enzyme. *Biochem. Genet.* 15: 477-486.
2. Dzeja, P.P., Zeleznikar, R.J. and Goldberg, N.D. 1998. Adenylate kinase: kinetic behavior in intact cells indicates it is integral to multiple cellular processes. *Mol. Cell. Biochem.* 184: 169-182.
3. Kohler, C., Gahm, A., Noma, T., Nakazawa, A., Orrenius, S. and Zhivotovsky, B. 1999. Release of adenylate kinase 2 from the mitochondrial intermembrane space during apoptosis. *FEBS Lett.* 447: 10-12.
4. 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/>
5. Carrasco, A.J., Dzeja, P.P., Alekseev, A.E., Pucar, D., Zingman, L.V., Abraham, M.R., Hodgson, D., Bienengraeber, M., Puceat, M., Janssen, E., Wieringa, B. and Terzic, A. 2001. Adenylate kinase phosphotransfer communicates cellular energetic signals to ATP-sensitive potassium channels. *Proc. Natl. Acad. Sci. USA* 98: 7623-7628.
6. LocusLink Report. (LocusID: 204). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: AK2 (human) mapping to 1p35.1.

PRODUCT

AK2 (h): 293T Lysate represents a lysate of human AK2 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

AK2 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive AK2 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.

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.

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.