SANTA CRUZ BIOTECHNOLOGY, INC.

AK2 (C-20): sc-17623

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 principal 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., et al. 1977. Adenylate kinase 2, a mitochondrial enzyme. Biochem. Genet. 15: 477-486.
2. 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.
3. Kohler, C., et al. 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., et al. 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; Ak2 (mouse) mapping to 4 D2.2.

SOURCE

AK2 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of AK2 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-17623 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

AK2 (C-20) is recommended for detection of AK2 isoforms A and B of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

AK2 (C-20) is also recommended for detection of AK2 isoforms A and B in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for AK2 siRNA (h): sc-38906, AK2 siRNA (m): sc-38907, AK2 shRNA Plasmid (h): sc-38906-SH, AK2 shRNA Plasmid (m): sc-38907-SH, AK2 shRNA (h) Lentiviral Particles: sc-38906-V and AK2 shRNA (m) Lentiviral Particles: sc-38907-V.

Positive Controls: HeLa whole cell lysate: sc-2200 or Jurkat whole cell lysate: sc-2204.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.