SANTA CRUZ BIOTECHNOLOGY, INC.

AK4 (G-3): sc-398661

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. Rat AK4 mRNA is expressed as a 223 amino acid protein in the central nervous system from the middle stage of embryogenesis to adulthood.

REFERENCES

1. 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.
2. Yoneda, T., et al. 1998. Identification of a novel adenylate kinase system in the brain: cloning of the fourth adenylate kinase. Brain Res. Mol. Brain Res. 62: 187-195.
3. 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/
4. 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.

CHROMOSOMAL LOCATION

Genetic locus: AK4 (human) mapping to 1p31.3; Ak4 (mouse) mapping to 4 C6.

SOURCE

AK4 (G-3) is a mouse monoclonal antibody raised against amino acids 121-179 mapping within an internal region of AK4 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

AK4 (G-3) is recommended for detection of AK4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for AK4 siRNA (h): sc-38908, AK4 siRNA (m): sc-38909, AK4 shRNA Plasmid (h): sc-38908-SH, AK4 shRNA Plasmid (m): sc-38909-SH, AK4 shRNA (h) Lentiviral Particles: sc-38908-V and AK4 shRNA (m) Lentiviral Particles: sc-38909-V.

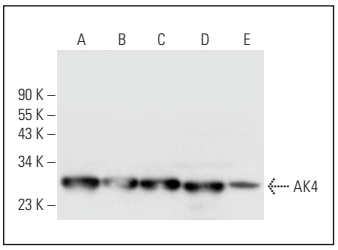
Molecular Weight of AK4: 25 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, Raji whole cell lysate: sc-364236 or A-431 whole cell lysate: sc-2201.

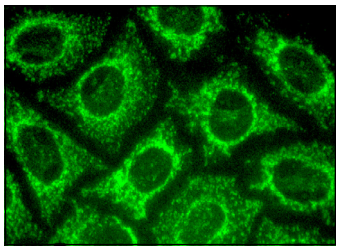
RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



AK4 (G-3): sc-398661. Western blot analysis of AK4 expression in Hep G2 (**A**), HeLa (**B**), Raji (**C**), A-431 (**D**) and MCF7 (**E**) whole cell lysates.



AK4 (G-3): sc-398661. Immunofluorescence staining of methanol-fixed HeLa cells showing mitochondrial localization.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. 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.