SANTA CRUZ BIOTECHNOLOGY, INC.

AK5 (L-14): sc-28508

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 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. AK5 (also designated AK6 or ATP-AMP transphosphorylase) is expressed in the brain and localizes to the cytosol. Like other AKs, it contains an NMP-binding domain, a lid domain and a P-loop. AK5 phosphorylates dAMP and AMP with equal efficiency. It is similar to UMP/CMP kinase and the two enzymes overlap in substrate specificity. Human AK5 occurs in three isoforms: one short isoform (AK5) and two long isoforms (AK5-1 and AK5-2).

REFERENCES

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5. Wirschell, M., et al. 2004. Oda5p, a novel axonemal protein required for assembly of the outer Dynein arm and an associated adenylate kinase. Mol. Biol. Cell 15: 2729-2741.
6. Noma, T., et al. 2005. Dynamics of nucleotide metabolism as a supporter of life phenomena. J. Med. Invest. 52: 127-136.
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CHROMOSOMAL LOCATION

Genetic locus: AK5 (human) mapping to 1p31.1, AK1 (human) mapping to 9q34.1; Ak5 (mouse) mapping to 3 H3, Ak1 (mouse) mapping to 2 B.

RESEARCH USE

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

SOURCE

AK5 (L-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of AK5 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-28508 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

AK5 (L-14) is recommended for detection of AK5 and, to a lesser extent, AK1 of human and, to a lesser extent, mouse and rat 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).

AK5 (L-14) is also recommended for detection of AK5 and, to a lesser extent, AK1 in additional species, including canine, bovine and porcine.

Molecular Weight of AK5: 22 kDa.

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.

STORAGE

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

PROTOCOLS

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