

AK5 (H-48): sc-98867

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.
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CHROMOSOMAL LOCATION

Genetic locus: AK5 (human) mapping to 1p31.1; Ak5 (mouse) mapping to 3 H3.

SOURCE

AK5 (H-48) is a rabbit polyclonal antibody raised against amino acids 41-87 mapping within an internal region 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.

APPLICATIONS

AK5 (H-48) is recommended for detection of AK5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

AK5 (H-48) is also recommended for detection of AK5 in additional species, including canine, bovine and porcine.

\Suitable for use as control antibody for AK5 siRNA (h): sc-72059, AK5 siRNA (m): sc-72060, AK5 shRNA Plasmid (h): sc-72059-SH, AK5 shRNA Plasmid (m): sc-72060-SH, AK5 shRNA (h) Lentiviral Particles: sc-72059-V and AK5 shRNA (m) Lentiviral Particles: sc-72060-V.

Molecular Weight of AK5: 22 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (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.

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.