

ADK (D-21): sc-23360

BACKGROUND

Adenosine kinase (ATP:adenosine 5-prime-phosphotransferase), or ADK, is an abundant enzyme in mammalian tissues that catalyzes the transfer of the gamma-phosphate from ATP to adenosine, thereby serving as a regulator of concentrations of both extracellular adenosine and intracellular adenine nucleotides. Adenosine, an extracellular signaling molecule, has widespread effects on the cardiovascular, nervous, respiratory, and immune systems with increased concentration at sites of tissue injury and inflammation. Adenosine is an efficient inhibitor of neuronal activity with the ability to suppress seizure activity in various animal models of epilepsy. The human ADK gene maps to chromosome 10q22.2 and encodes 2 ADK transcripts that encode a 345-amino acid form and a 362-amino acid form of the enzyme. These 2 alternately spliced forms differ only at the 5-prime end, where the first 4 encoded residues of the short form are replaced by 21 residues in the long form. When expressed, both isoforms of the enzyme phosphorylate adenosine with identical kinetics and both require Mg^{2+} for activity. ADK is fully active under dilute conditions, but tends to form soluble aggregates at higher concentrations, which results in inactivation of the enzyme.

REFERENCES

1. Sakowicz, M., et al. 2001. Expression level of adenosine kinase in rat tissues. Lack of phosphate effect on the enzyme activity. *Acta Biochim. Pol.* 48: 745-754.
2. Zumsteg, V., et al. 2002. The use of real-time PCR with fluorogenic probes for the rapid selection of mutant neuroectodermal grafts. *J. Neurosci. Methods* 120: 85-94.
3. Spychala, J., et al. 2002. Cyclosporin A and FK506 decrease adenosine kinase activity and adenosine uptake in T-lymphocytes. *J. Lab Clin. Med.* 140: 84-91.
4. Gomtsyan, A., et al. 2002. Design, synthesis, and structure-activity relationship of 6-alkynylpyrimidines as potent adenosine kinase inhibitors. *J. Med. Chem.* 45: 3639-3648.
5. Chakraborty, A., et al. 2002. A single-domain cyclophilin from *Leishmania donovani* reactivates soluble aggregates of adenosine kinase by isomerase-independent chaperone function. *J. Biol. Chem.* 277: 47451-47451.

CHROMOSOMAL LOCATION

Genetic locus: ADK (human) mapping to 10q22.2; Adk (mouse) mapping to 14 A3.

SOURCE

ADK (D-21) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ADK of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-23360 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ADK (D-21) is recommended for detection of ADK of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

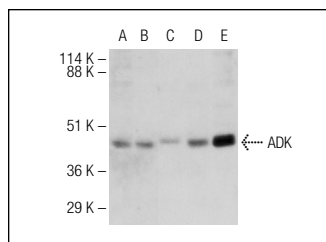
ADK (D-21) is also recommended for detection of ADK in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for ADK siRNA (h): sc-38902, ADK siRNA (m): sc-38903, ADK shRNA Plasmid (h): sc-38902-SH, ADK shRNA Plasmid (m): sc-38903-SH, ADK shRNA (h) Lentiviral Particles: sc-38902-V and ADK shRNA (m) Lentiviral Particles: sc-38903-V.

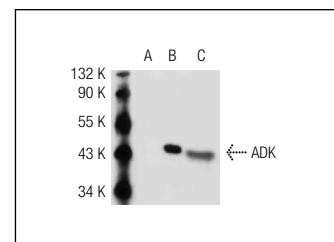
Molecular Weight of ADK: 48/38 kDa.

Positive Controls: rat liver extract: sc-2395, HeLa whole cell lysate: sc-2200 or ADK (m): 293T Lysate: sc-118256.

DATA



ADK (D-21): sc-23360. Western blot analysis of ADK expression in Hep G2 (A), HeLa (B) and NIH/3T3 (C) whole cell lysates and rat kidney (D) and rat liver (E) tissue extracts.



ADK (D-21): sc-23360. Western blot analysis of ADK expression in non-transfected 293T: sc-117752 (A) and mouse ADK transfected 293T: sc-118256 (B) whole cell lysates and rat liver tissue extract (C).

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.

MONOS
Satisfaction
Guaranteed

Try **ADK (H-1): sc-514588** or **ADK (F-5): sc-365470**, our highly recommended monoclonal alternatives to ADK (D-21).