

# AK4 (H-59): sc-366012

## 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., Zeleznikar, R.J. and Goldberg, N.D. 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., Sato, M., Maeda, M. and Takagi, H. 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., Dzeja, P.P., Alekseev, A.E., Pucar, D., Zingman, L.V., Abraham, M.R., Hodgson, D., Bienengraeber, M., Puceat, M., Janssen, E., Wieringa, B. and Terzic, A. 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 (H-59) is a rabbit polyclonal antibody raised against amino acids 121-179 mapping within an internal region of AK4 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.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.

## APPLICATIONS

AK4 (H-59) is recommended for detection of AK4 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).

AK4 (H-59) is also recommended for detection of AK4 in additional species, including equine, canine, bovine, porcine and avian.

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.

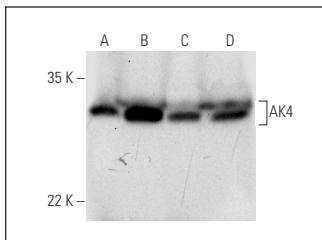
Molecular Weight of AK4: 25 kDa.

Positive Controls: AK4 (h): 293T Lysate: sc-112661, Hep G2 cell lysate: sc-2227 or MCF7 whole cell lysate: sc-2206.

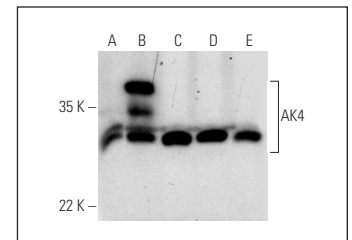
## RECOMMENDED SECONDARY REAGENTS

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.

## DATA



AK4 (H-59): sc-366012. Western blot analysis of AK4 expression in MCF7 (A), HeLa (B), A549 (C) and NCI-H1299 (D) whole cell lysates.



AK4 (H-59): sc-366012. Western blot analysis of AK4 expression in non-transfected 293T: sc-117752 (A), human AK4 transfected 293T: sc-112661 (B), Hep G2 (C), Raji (D) and A-431 (E) whole cell lysates.

## RESEARCH USE

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