

AK2 (F-2): sc-374095

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. AK2 is found in the mitochondria of liver and heart tissues and is the only AK that localizes to the mitochondrial intermembrane space. In apoptotic cells, AK2 is the only AK that translocates into the cytosol concomitantly with cytochrome c, suggesting that only intermembrane proteins are released from mitochondria during the early stages of apoptosis.

CHROMOSOMAL LOCATION

Genetic locus: AK2 (human) mapping to 1p35.1; Ak2 (mouse) mapping to 4 D2.2.

SOURCE

AK2 (F-2) is a mouse monoclonal antibody raised against amino acids 31-95 mapping near the N-terminus of AK2 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

AK2 (F-2) is available conjugated to agarose (sc-374095 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374095 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374095 PE), fluorescein (sc-374095 FITC), Alexa Fluor[®] 488 (sc-374095 AF488), Alexa Fluor[®] 546 (sc-374095 AF546), Alexa Fluor[®] 594 (sc-374095 AF594) or Alexa Fluor[®] 647 (sc-374095 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-374095 AF680) or Alexa Fluor[®] 790 (sc-374095 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor[®] is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

AK2 (F-2) is recommended for detection of AK2 of mouse, rat and human 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

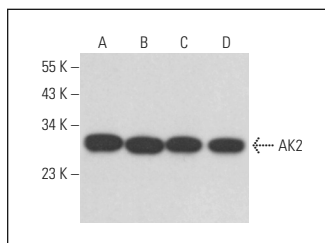
Suitable for use as control antibody for AK2 siRNA (h): sc-38906, AK2 siRNA (m): sc-38907, AK2 shRNA Plasmid (h): sc-38906-SH, AK2 shRNA Plasmid (m): sc-38907-SH, AK2 shRNA (h) Lentiviral Particles: sc-38906-V and AK2 shRNA (m) Lentiviral Particles: sc-38907-V.

Positive Controls: TF-1 cell lysate: sc-2412, KNRK whole cell lysate: sc-2214 or M1 whole cell lysate: sc-364782.

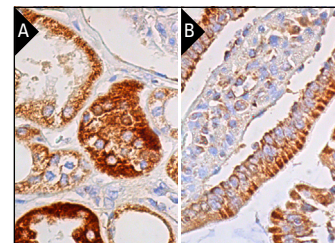
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



AK2 (F-2): sc-374095. Western blot analysis of AK2 expression in TF-1 (A), M1 (B), KNRK (C) and c4 (D) whole cell lysates.



AK2 (F-2): sc-374095. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells (B).

SELECT PRODUCT CITATIONS

- Miao, W., et al. 2019. Targeted quantitative kinome analysis identifies PRPS2 as a promoter for colorectal cancer metastasis. *J. Proteome Res.* 18: 2279-2286.
- Kumari, R., et al. 2019. Caspase-10 inhibits ATP-citrate lyase-mediated metabolic and epigenetic reprogramming to suppress tumorigenesis. *Nat. Commun.* 10: 4255.
- Liu, H., et al. 2019. Prognostic and therapeutic potential of adenylate kinase 2 in lung adenocarcinoma. *Sci. Rep.* 9: 17757.
- Liu, X., et al. 2020. Adenylate kinase 4 modulates the resistance of breast cancer cells to tamoxifen through an m⁶A-based epitranscriptomic mechanism. *Mol. Ther.* 28: 2593-2604.

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.