Data Sheet (Cat.No.TMAY-02329)

Anti-AK3L1 Antibody (3I126)

Product Details

Ig Type:	Rabbit IgG
Reactivity:	Human
Conjugation:	Unconjugated
Clone:	3I126
Purification:	Protein A

Applications

Verified Activity:	1. Immunofluorescence staining of Human AK4 in Hela cells. Cells were fixed with 4% PFA, permeabilzed with 0.3% Triton X-100 in PBS, blocked with 10% serum, and incubated with rabbit anti-Human AK4 monoclonal antibody (1:60) at 37°C 1 hour. Then cells were stained with the Alexa Fluor® 594-conjugated Goat Anti-rabbit IgG secondary antibody (red) and counterstained with DAPI (blue). Positive staining was localized to cytoplasm. 2. AK4 was immunoprecipitated using: -Lane A:0.5 mg HepG2 Whole Cell Lysate. -2 µL anti-AK4 rabbit monoclonal antibody and 15 µl of 50 % Protein G agarose. -Primary antibody: -Anti-AK4 rabbit monoclonal antibody, at 1:200 dilution. -Secondary antibody: -Dylight 800-labeled antibody to rabbit IgG (H+L), at 1:5000 dilution. -Developed using the odyssey technique. -Performed under reducing conditions. -Predicted band size: 26 kDa. -Observed band size: 26 kDa. 3. Anti-AK4 rabbit monoclonal antibody at 1:500 dilution. -Lane A: MCF7 Whole Cell Lysate. -Lane B: HepG2 Whole Cell Lysate. -Lane C: 293T Whole Cell lysate. -Lysates/proteins at 30 µg per lane. -Secondary -Goat Anti-Rabbit IgG H&L (Dylight800) at 1/10000 dilution. -Developed using the Odyssey technique. -Performed under reducing conditions. -Predicted band size:26 kDa. -Observed band size:26 kDa
Application:	ICC/IF,IP,WB

Recommended	WB: 1:500-1:2000; ICC-IF: 1:20-1:100; IP: 1-4 μL/mg of lysate

Properties

Stability & Storage:	Store at 2°C-8°C for 1 month. Store at -20°C or -80°C for 12 months. Avoid repeated freeze-thaw cycles. Preservative-Free.
Shipping:	Shipping with blue ice.

Antigen Details

Immunogen:	Recombinant Protein: Human AK4 / AK3L1 protein (TMPY-04469)
Antigen Species:	Human
Synonyms:	adenylate kinase 4;AK4;AK3;AK3L2;AK3L1

Research Background

Adenylate kinase isoenzyme 4, mitochondrial, also known as ATP-AMP transphosphorylase, Adenylate kinase 3-like, AK4 and AK3L1, is a member theadenylate kinase family. AK4 / AK3L1 is localized to the mitochondrial matrix. Adenylate kinases regulate the adenine and guanine nucleotide compositions within a cell by catalyzing the reversible transfer of phosphate group among these nucleotides. Five isozymes of adenylate kinase have been identified in vertebrates. Expression of these isozymes is tissue-specific and developmentally regulated. AK4 / AK3L1 catalyzes the reversible transfer of the terminal phosphate group between ATP and AMP. It may also be active with GTP. Adenylate kinase 4 (AK4 / AK3L1) is a unique member with no enzymatic activity in the adenylate kinase (AK) family although it shares high sequence homology with other AKs. It remains unclear what physiological function AK4 might play or why it is enzymatically inactive. AK4 / AK3L1 retains the capability of binding nucleotides. It has a glutamine residue instead of a key arginine residue in the active site well conserved in other AKs. The enzymatically inactive AK4 is a stress responsive protein critical to cell survival and proliferation. AK4 / AK3L1 is likely that the interaction with the mitochondrial inner membrane protein ANT is important for AK4 to exert the protective benefits to cells under stress. AK4 / AK3L1 also acts on the specific mechanism of energy metabolism rather than control of the homeostasis of the ADP pool ubiquitously.

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