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ADK Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7091b

Product Information

Application	WB, IHC-P, E
Primary Accession	P55263
Other Accession	NP_006712
Reactivity	Human
Predicted	Mouse, Rat, Bovine, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB05395
Calculated MW	40545
Antigen Region	322-352

Additional Information

Gene ID	132
Other Names	Adenosine kinase, AK, Adenosine 5'-phosphotransferase, ADK
Target/Specificity	This ADK antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 322-352 amino acids from the C-terminal region of human ADK.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	ADK Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ADK {ECO:0000303|PubMed:19635462, ECO:0000312|HGNC:HGNC:257}
Function	Adenosine kinase that mediates the phosphorylation of the purine nucleoside adenosine at the 5' position in an ATP-dependent manner: catalyzes phosphorylation of both unmodified and modified adenosines

(PubMed:21963049, PubMed:40840445, PubMed:6246102, PubMed:8577746, PubMed:9070863). Plays a key role in the detoxification of modified adenosines containing N(6)-methylated adenine (m6A) post- transcriptional modification (PubMed:40840445). Modified nucleosides are derived from the degradation of RNAs (mRNAs, rRNAs and tRNAs) and possess intrinsic cytotoxicity and must be cleared to prevent metabolic dysfunction (PubMed:40840445). Catalyzes the phosphorylation of the free cytosolic methylated adenosine nucleotides N(6)-methyladenosine (m6A), N(6),N(6)-dimethyladenosine (m6,6A) and N(6)- isopentenyladenosine (i6A) into adenosine monophosphate (AMP) intermediates that are further detoxified by MAPDA/ADAL (PubMed:40840445).

Cellular Location Cytoplasm, cytosol. [Isoform 2]: Cytoplasm

Tissue Location Widely expressed. Highest level in placenta, liver, muscle and kidney.

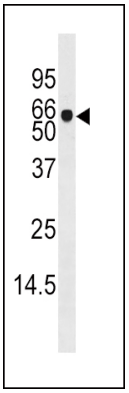
Background

Adenosine kinase is an abundant enzyme in mammalian tissues. The enzyme 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 has widespread effects on the cardiovascular, nervous, respiratory, and immune systems and inhibitors of the enzyme could play an important pharmacological role in increasing intravascular adenosine concentrations and acting as anti-inflammatory agents. Alternative splicing results in two transcript variants encoding different isoforms. Both isoforms of the enzyme phosphorylate adenosine with identical kinetics and both require Mg2+ for activity.

References

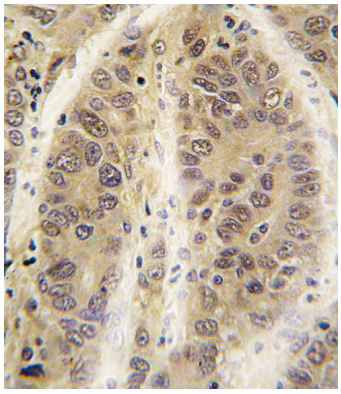
Szkotak, A.J., et al., J. Membr. Biol. 192(3):169-179 (2003). Singh, B., et al., DNA Cell Biol. 20(1):53-65 (2001). Van Rompay, A.R., et al., Eur. J. Biochem. 261(2):509-517 (1999). Mathews, I.I., et al., Biochemistry 37(45):15607-15620 (1998). McNally, T., et al., Biochem. Biophys. Res. Commun. 231(3):645-650 (1997).

Images



Western blot analysis of anti-ADK Pab (Cat. #AP7091b) in mouse liver tissue lysate (35ug/lane). ADK(arrow) was detected using the purified Pab.

Formalin-fixed and paraffin-embedded human hepatocarcinoma tissue reacted with ADK antibody (C-term) (Cat.#AP7091b), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



Citations

- Adenosine kinase inhibition selectively promotes rodent and porcine islet β-cell replication.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.