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AK3 Antibody (C-term H38)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8132b

Product Information

Application	WB, IHC-P, E
Primary Accession	P27144
Other Accession	Q9WUS0, Q9WUR9
Reactivity	Human, Mouse
Predicted	Rat, Bovine, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB3888
Calculated MW	25268
Antigen Region	195-223

Additional Information

Gene ID	205
Other Names	Adenylate kinase 4, mitochondrial {ECO:0000255|HAMAP-Rule:MF_03170}, AK 4 {ECO:0000255|HAMAP-Rule:MF_03170}, 27410 {ECO:0000255|HAMAP-Rule:MF_03170}, 2746 {ECO:0000255|HAMAP-Rule:MF_03170}, Adenylate kinase 3-like {ECO:0000255|HAMAP-Rule:MF_03170}, GTP:AMP phosphotransferase AK4 {ECO:0000255|HAMAP-Rule:MF_03170}, AK4 {ECO:0000255|HAMAP-Rule:MF_03170}
Target/Specificity	This AK3 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 195-223 amino acids from the C-terminal region of human AK3.
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 purified through a protein A column, followed by peptide affinity purification.
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	AK3 Antibody (C-term H38) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	AK4 (HGNC:363)
Function	Broad-specificity mitochondrial nucleoside phosphate kinase involved in cellular nucleotide homeostasis by catalyzing nucleoside- phosphate interconversions (PubMed:19073142, PubMed:19766732, PubMed:23416111, PubMed:24767988). Similar to other adenylate kinases, preferentially catalyzes the phosphorylation of the nucleoside monophosphate AMP with ATP as phosphate donor to produce ADP (PubMed:19766732). Phosphorylates only AMP when using GTP as phosphate donor (PubMed:19766732). In vitro, can also catalyze the phosphorylation of CMP, dAMP and dCMP and use GTP as an alternate phosphate donor (PubMed:19766732, PubMed:23416111). Moreover, exhibits a diphosphate kinase activity, producing ATP, CTP, GTP, UTP, TTP, dATP, dCTP and dGTP from the corresponding diphosphate substrates with either ATP or GTP as phosphate donors (PubMed:23416111). Plays a role in controlling cellular ATP levels by regulating phosphorylation and activation of the energy sensor protein kinase AMPK (PubMed:24767988, PubMed:26980435). Plays a protective role in the cellular response to oxidative stress (PubMed:19130895, PubMed:23474458, PubMed:26980435).
Cellular Location	Mitochondrion matrix {ECO:0000255|HAMAP- Rule:MF_03170, ECO:0000269|PubMed:11485571, ECO:0000269|PubMed:19766732, ECO:0000269|PubMed:26980435}
Tissue Location	Highly expressed in kidney, moderately expressed in heart and liver and weakly expressed in brain

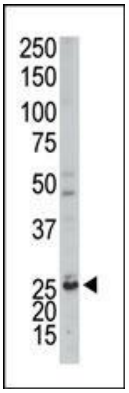
Background

AK3 is a member of the adenylate kinase family of enzymes. The encoded protein 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.

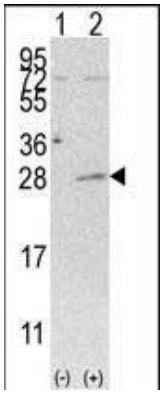
References

Van Rompay, A.R., et al., Eur. J. Biochem. 261(2):509-517 (1999).
Yoneda, T., et al., Brain Res. Mol. Brain Res. 62(2):187-195 (1998).
Xu, G., et al., Genomics 13(3):537-542 (1992).
Robson, E.B., et al., Cytogenet. Cell Genet. 32 (1-4), 144-152 (1982).

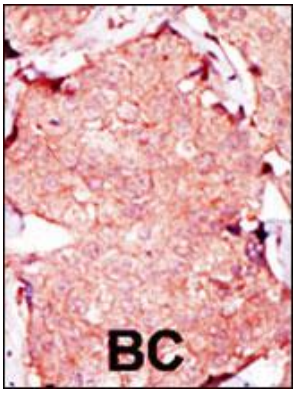
Images



The anti-AK3 Pab (Cat. #AP8132b) is used in Western blot to detect AK3 in mouse kidney tissue lysate.



Western blot analysis of AK3 (arrow) using rabbit polyclonal AK3 Antibody (C-term H38) (Cat. #AP8132b). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected with the AK3 gene (Lane 2) (Origene Technologies).



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

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