

**AK3 Antibody (C-term H38)**  
**Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP8132b****Specification**

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**AK3 Antibody (C-term H38) - Product Information**

Application	<b>WB, IHC-P,E</b>
Primary Accession	<a href="#">P27144</a>
Other Accession	<a href="#">O9WUS0</a> , <a href="#">O9WUR9</a>
Reactivity	<b>Human, Mouse</b>
Predicted	<b>Rat</b>
Host	<b>Rabbit</b>
Clonality	<b>Polyclonal</b>
Isotype	<b>Rabbit IgG</b>
Calculated MW	<b>25268</b>
Antigen Region	<b>195-223</b>

**AK3 Antibody (C-term H38) - 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~~1:50~100

**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.

**AK3 Antibody (C-term H38) - 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**

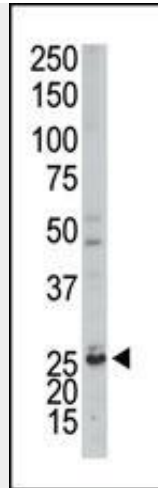
Highly expressed in kidney, moderately expressed in heart and liver and weakly expressed in brain

**AK3 Antibody (C-term H38) - Protocols**

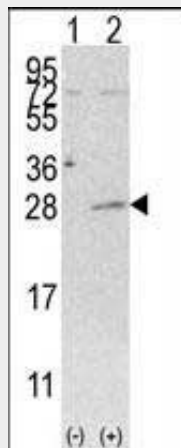
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

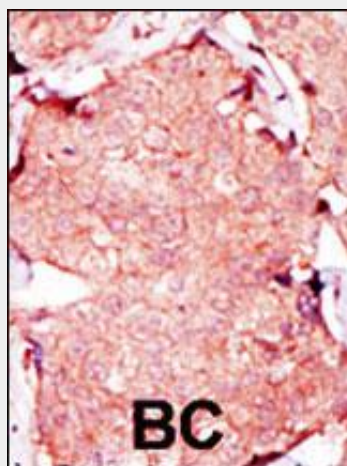
**AK3 Antibody (C-term H38) - Images**



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.

**AK3 Antibody (C-term H38) - 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.

**AK3 Antibody (C-term H38) - 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).