

## AK3 Antibody (C-term H38) Blocking Peptide

Synthetic peptide  
Catalog # BP8132b

### Specification

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#### AK3 Antibody (C-term H38) Blocking Peptide - Product Information

Primary Accession [P27144](#)

#### AK3 Antibody (C-term H38) Blocking Peptide - 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

The synthetic peptide sequence used to generate the antibody [AP8132b](/product/products/AP8132b) was selected from the C-term region of human AK3 . A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

#### Format

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

#### Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

#### Precautions

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

#### AK3 Antibody (C-term H38) Blocking Peptide - 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](http://www.uniprot.org/citations/19073142), PubMed:[19766732](http://www.uniprot.org/citations/19766732), PubMed:[23416111](http://www.uniprot.org/citations/23416111), PubMed:[24767988](http://www.uniprot.org/citations/24767988)). Similar to other adenylate kinases, preferentially catalyzes the phosphorylation of the nucleoside monophosphate AMP with ATP as phosphate donor to produce ADP (PubMed:

href="http://www.uniprot.org/citations/19766732" target="\_blank">19766732</a>). Phosphorylates only AMP when using GTP as phosphate donor (PubMed:<a href="http://www.uniprot.org/citations/19766732" target="\_blank">19766732</a>). In vitro, can also catalyze the phosphorylation of CMP, dAMP and dCMP and use GTP as an alternate phosphate donor (PubMed:<a href="http://www.uniprot.org/citations/19766732" target="\_blank">19766732</a>, PubMed:<a href="http://www.uniprot.org/citations/23416111" target="\_blank">23416111</a>). 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:<a href="http://www.uniprot.org/citations/23416111" target="\_blank">23416111</a>). Plays a role in controlling cellular ATP levels by regulating phosphorylation and activation of the energy sensor protein kinase AMPK (PubMed:<a href="http://www.uniprot.org/citations/24767988" target="\_blank">24767988</a>, PubMed:<a href="http://www.uniprot.org/citations/26980435" target="\_blank">26980435</a>). Plays a protective role in the cellular response to oxidative stress (PubMed:<a href="http://www.uniprot.org/citations/19130895" target="\_blank">19130895</a>, PubMed:<a href="http://www.uniprot.org/citations/23474458" target="\_blank">23474458</a>, PubMed:<a href="http://www.uniprot.org/citations/26980435" target="\_blank">26980435</a>).

#### 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) Blocking Peptide - Protocols

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

- [Blocking Peptides](#)

### AK3 Antibody (C-term H38) Blocking Peptide - Images

### AK3 Antibody (C-term H38) Blocking Peptide - 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) Blocking Peptide - 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).