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AK3 Antibody (N-term E59) Blocking Peptide

Synthetic peptide
Catalog # BP8132a

Specification

AK3 Antibody (N-term E59) Blocking Peptide - Product Information

Primary Accession P27144

AK3 Antibody (N-term E59) 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 AP8132a was selected from the N-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 (N-term E59) 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, 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:<a

href="http://www.uniprot.org/citations/19766732" target="_blank">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 (N-term E59) Blocking Peptide - Protocols

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

- Blocking Peptides

AK3 Antibody (N-term E59) Blocking Peptide - Images

AK3 Antibody (N-term E59) 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 (N-term E59) 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).