

AK4 Blocking Peptide (Center)
Synthetic peptide
Catalog # BP20571a**Specification**

AK4 Blocking Peptide (Center) - Product InformationPrimary Accession [P27144](#)**AK4 Blocking Peptide (Center) - 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 is selected from aa 139-153 of HUMAN AK4

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.

AK4 Blocking Peptide (Center) - Protein InformationName 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](http://www.uniprot.org/citations/19766732), PubMed: [23416111](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/23416111)). Plays a role in controlling cellular ATP levels by regulating phosphorylation and activation of the energy sensor protein kinase AMPK (PubMed: [24767988](http://www.uniprot.org/citations/24767988), PubMed: [26980435](http://www.uniprot.org/citations/26980435)). Plays a protective role in the cellular response to oxidative stress (PubMed: [19130895](http://www.uniprot.org/citations/19130895), PubMed: [23474458](http://www.uniprot.org/citations/23474458), PubMed: [26980435](http://www.uniprot.org/citations/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

AK4 Blocking Peptide (Center) - Protocols

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

- [Blocking Peptides](#)

AK4 Blocking Peptide (Center) - Images

AK4 Blocking Peptide (Center) - Background

Involved in maintaining the homeostasis of cellular nucleotides by catalyzing the interconversion of nucleoside phosphates. Efficiently phosphorylates AMP and dAMP using ATP as phosphate donor, but phosphorylates only AMP when using GTP as phosphate donor. Also displays broad nucleoside diphosphate kinase activity.

AK4 Blocking Peptide (Center) - References

Xu G., et al. Genomics 13:537-542(1992).
Ebert L., et al. Submitted (JUN-2004) to the EMBL/GenBank/DDBJ databases.
Ota T., et al. Nat. Genet. 36:40-45(2004).
Gregory S.G., et al. Nature 441:315-321(2006).
Mural R.J., et al. Submitted (SEP-2005) to the EMBL/GenBank/DDBJ databases.