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Deoxyguanosine Kinase (DGUOK) Antibody (N-term) Blocking peptide

Synthetic peptide
Catalog # BP7086a

Specification

Deoxyguanosine Kinase (DGUOK) Antibody (N-term) Blocking peptide - Product Information

Primary Accession	Q16854
Other Accession	NP_550438

Deoxyguanosine Kinase (DGUOK) Antibody (N-term) Blocking peptide - Additional Information

Gene ID 1716

Other Names
Deoxyguanosine kinase, mitochondrial, dGK, DGUOK, DGK

Target/Specificity
The synthetic peptide sequence used to generate the antibody AP7086a was selected from the N-term region of human DGUOK. 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.

Deoxyguanosine Kinase (DGUOK) Antibody (N-term) Blocking peptide - Protein Information

Name DGUOK

Synonyms DGK

Function
Phosphorylates deoxyguanosine and deoxyadenosine in the mitochondrial matrix, with the highest efficiency for deoxyguanosine (PubMed:8692979, PubMed:8706825, PubMed:11687801, PubMed:17073823, PubMed:<a href="http://www.uniprot.org/citations/23043144"

target="_blank">23043144). In non-replicating cells, where cytosolic dNTP synthesis is down-regulated, mtDNA synthesis depends solely on DGUOK and TK2. Phosphorylates certain nucleoside analogs (By similarity). Widely used as target of antiviral and chemotherapeutic agents.

Cellular Location
Mitochondrion {ECO:0000250|UniProtKB:Q9QX60}.

Tissue Location
Ubiquitous. Highest expression in muscle, brain, liver and lymphoid tissues.

Deoxyguanosine Kinase (DGUOK) Antibody (N-term) Blocking peptide - Protocols

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

- Blocking Peptides

Deoxyguanosine Kinase (DGUOK) Antibody (N-term) Blocking peptide - Images

Deoxyguanosine Kinase (DGUOK) Antibody (N-term) Blocking peptide - Background

Mitochondrial deoxyguanosine kinase (DGUOK) is required for the phosphorylation of several deoxyribonucleosides and certain purine deoxykribonucleoside analogs widely employed as antiviral and chemotherapeutic agents. Purine deoxyribonucleoside analogs are extensively used in treatment of lymphoproliferative disorders. These compounds are administered as pro-drugs, and their efficiency is dependent on intracellular phosphorylation to the corresponding triphosphates. In mammalian cells, the phosphorylation of purine deoxyribonucleosides is mediated predominantly by 2 deoxyribonucleoside kinases: cytosolic deoxycytidine kinase (DCK) and mitochondrial deoxyguanosine kinase (DGUOK also known as DGK). DGUOK expression is ubiquitous, with highest levels in muscle, brain, liver and lymphoid tissues. Defects in DGUOK are a cause of mitochondrial DNA depletion syndrome (MDS). MDS is a clinically heterogeneous group of disorders characterized by a reduction in mitochondrial DNA (mtDNA) copy number. Primary mtDNA depletion is inherited as an autosomal recessive trait and may affect single organs, typically muscle or liver, or multiple tissues. Mitochondrial DNA depletion syndromes are phenotypically heterogeneous, autosomal recessive disorders characterized by tissue-specific reduction in mtDNA copy number. Affected individuals with the hepatocerebral form of mtDNA depletion syndrome have early progressive liver failure and neurologic abnormalities, hypoglycemia, and increased lactate in body fluids.