

HK1 Antibody (C-term)
Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8141b

Specification

HK1 Antibody (C-term) - Product Information

| | |
|-------------------|------------------------|
| Application | WB, IHC-P,E |
| Primary Accession | P19367 |
| Reactivity | Human |
| Host | Rabbit |
| Clonality | Polyclonal |
| Isotype | Rabbit IgG |
| Calculated MW | 102486 |
| Antigen Region | 705-734 |

HK1 Antibody (C-term) - Additional Information

Gene ID 3098

Other Names

Hexokinase-1, Brain form hexokinase, Hexokinase type I, HK I, HK1

Target/Specificity

This HK1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 705-734 amino acids from the C-terminal region of human HK1.

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 prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.

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

HK1 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

HK1 Antibody (C-term) - Protein Information

Name HK1 ([HGNC:4922](#))

Function Catalyzes the phosphorylation of various hexoses, such as D- glucose, D-glucosamine, D-fructose, D-mannose and 2-deoxy-D-glucose, to hexose 6-phosphate (D-glucose 6-phosphate,

D-glucosamine 6-phosphate, D-fructose 6-phosphate, D-mannose 6-phosphate and 2-deoxy-D-glucose 6-phosphate, respectively) (PubMed:[1637300](#), PubMed:[25316723](#), PubMed:[27374331](#)). Does not phosphorylate N-acetyl-D-glucosamine (PubMed:[27374331](#)). Mediates the initial step of glycolysis by catalyzing phosphorylation of D-glucose to D-glucose 6-phosphate (By similarity). Involved in innate immunity and inflammation by acting as a pattern recognition receptor for bacterial peptidoglycan (PubMed:[27374331](#)). When released in the cytosol, N-acetyl-D-glucosamine component of bacterial peptidoglycan inhibits the hexokinase activity of HK1 and causes its dissociation from mitochondrial outer membrane, thereby activating the NLRP3 inflammasome (PubMed:[27374331](#)).

Cellular Location

Mitochondrion outer membrane; Peripheral membrane protein. Cytoplasm, cytosol. Note=The mitochondrial-binding peptide (MBP) region promotes association with the mitochondrial outer membrane (Probable). Dissociates from the mitochondrial outer membrane following inhibition by N-acetyl-D-glucosamine, leading to relocation to the cytosol (PubMed:[27374331](#)).

Tissue Location

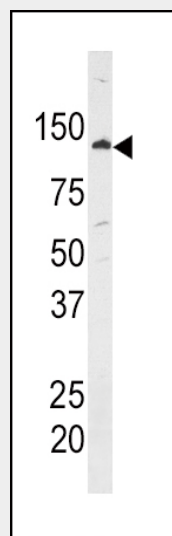
Isoform 2: Erythrocyte specific (Ref.6). Isoform 3: Testis-specific (PubMed:[10978502](#)). Isoform 4: Testis-specific (PubMed:[10978502](#)). {ECO:0000269|PubMed:[10978502](#), ECO:0000269|Ref.6}

HK1 Antibody (C-term) - Protocols

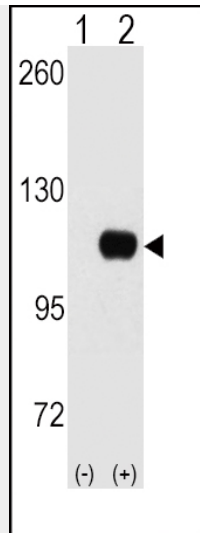
Provided below are standard protocols that you may find useful for product applications.

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

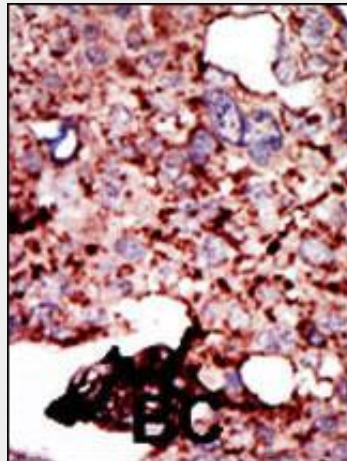
HK1 Antibody (C-term) - Images



Western blot analysis of anti-HK1 Antibody (C-term) (Cat. #AP8141b) in A375 cell line lysate. HK1 (arrow) was detected using the purified Pab.



Western blot analysis of HK1 (arrow) using HK1 Antibody (C-term) (Cat.#AP8141b). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected with the HK1 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 DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

HK1 Antibody (C-term) - Background

Hexokinases phosphorylate glucose to produce glucose-6-phosphate, thus committing glucose to the glycolytic pathway. The hexokinase gene encodes a ubiquitous form of hexokinase which localizes to the outer membrane of mitochondria. Mutations in this gene have been associated with hemolytic anemia due to hexokinase deficiency. Alternative splicing of the hexokinase gene results in five transcript variants which encode different isoforms, some of which are tissue-specific. Each isoform has a distinct N-terminus; the remainder of the protein is identical among all the isoforms. HK1 encodes the ubiquitously expressed isoform. Its 5' end includes an exon which is unique to this transcript and which encodes a distinct N-terminus that contains the porin binding domain (PBD). The porin binding domain mediates association with the mitochondrial membrane.

HK1 Antibody (C-term) - References

van Wijk, R., et al., Blood 101(1):345-347 (2003).
Murakami, K., et al., Acta Haematol. 108(4):204-209 (2002).

Murakami, K., et al., Mol. Genet. Metab. 67(2):118-130 (1999).
Aleshin, A.E., et al., Structure 6(1):39-50 (1998).
Ruzzo, A., et al., Blood 91(1):363-364 (1998).