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HK2 (Hexokinase II) Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8140a

Product Information

Application	IHC-P, WB, E
Primary Accession	P52789
Other Accession	P27881, Q1W674, O08528
Reactivity	Human, Rat, Mouse
Predicted	Mouse, Pig, Rat, Bovine, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	102380
Antigen Region	91-121

Additional Information

Gene ID	3099
Other Names	Hexokinase-2, Hexokinase type II, HK II, Muscle form hexokinase, HK2
Target/Specificity	This HK2 (Hexokinase II) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 91-121 amino acids from the N-terminal region of human HK2 (Hexokinase II).
Dilution	IHC-P~~1:100~500 WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
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	HK2 (Hexokinase II) Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	HK2 (HGNC:4923)
Function	Catalyzes the phosphorylation of hexose, such as D-glucose and D-fructose, to hexose 6-phosphate (D-glucose 6-phosphate and D- fructose 6-phosphate, respectively) (PubMed:23185017, PubMed:26985301, PubMed:29298880). Mediates the initial step of glycolysis by catalyzing phosphorylation of

	D-glucose to D-glucose 6-phosphate (PubMed:29298880). Plays a key role in maintaining the integrity of the outer mitochondrial membrane by preventing the release of apoptogenic molecules from the intermembrane space and subsequent apoptosis (PubMed:18350175).
Cellular Location	Mitochondrion outer membrane; Peripheral membrane protein. Cytoplasm, cytosol Note=The mitochondrial-binding peptide (MBP) region promotes association with the mitochondrial outer membrane (PubMed:29298880) The interaction with the mitochondrial outer membrane via the mitochondrial-binding peptide (MBP) region promotes higher stability of the protein (PubMed:29298880). Release from the mitochondrial outer membrane into the cytosol induces permeability transition pore (PTP) opening and apoptosis (PubMed:18350175).
Tissue Location	Predominant hexokinase isozyme expressed in insulin-responsive tissues such as skeletal muscle

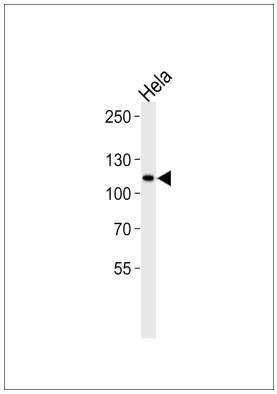
Background

In vertebrates there are four major glucose-phosphorylating isoenzymes, designated hexokinase I, II, III, and IV. Hexokinase is an allosteric enzyme inhibited by its product GLC-6-P. Hexokinase activity is involved in the first step in several metabolic pathways. HK3 is bound to the outer mitochondrial membrane. Its hydrophobic N-terminal sequence may be involved in membrane bindng. It is the predominant hexokinase isozyme expressed in insuline-responsive tissues such as skeletal muscle. The N- and C-terminal halves of this hexokinase show extensive sequence similarity to each other. The catalytic activity is associated with the C-terminus while regulatory function is associated wiht the N-terminus. Although found in NIDDM patients, genetic variations of HK2 do not contribute to the disease.

References

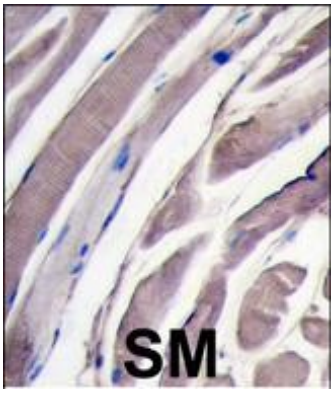
Lehto, M., et al., Diabetologia 38(12):1466-1474 (1995).
Vidal-Puig, A., et al., Diabetes 44(3):340-346 (1995).
Laakso, M., et al., Diabetes 44(3):330-334 (1995).
Echwald, S.M., et al., Diabetes 44(3):347-353 (1995).
Shinohara, Y., et al., Cancer Lett. 82(1):27-32 (1994).

Images



HK2 Antibody (E106) (Cat. #AP8140a) western blot analysis in Hela cell line lysates (35ug/lane).This demonstrates the HK2 antibody detected the HK2 protein (arrow).

Formalin-fixed and paraffin-embedded human skeletal muscle tissue reacted with HK2 antibody (N-term), 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.

Citations

- Circ_0046599 Promotes the Development of Hepatocellular Carcinoma by Regulating the miR-1258/RPN2 Network
- Analyses of resected human brain metastases of breast cancer reveal the association between up-regulation of hexokinase 2 and poor prognosis.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.