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HK2 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1441a

Product Information

Application	WB, IHC, FC, E
Primary Accession	P52789
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	3D3
Isotype	IgG1
Calculated MW	102380
Description	The hexokinases utilize Mg-ATP as a phosphoryl donor to catalyze the first step of intracellular glucose metabolism, the conversion of glucose to glucose- 6-phosphate. Four hexokinase isoenzymes have been identified, including hexokinase I (HXK I), hexokinase II (HXK II), hexokinase III (HXK III) and hexokinase IV (HXK IV, also designated glucokinase or GCK). Hexokinases I-III each contain an N-terminal cluster of hydrophobic amino acids. Glucokinase lacks the N-terminal hydrophobic cluster. The hydrophobic cluster is thought to be necessary for membrane binding. This is substantiated by the finding that glucokinase has lower affinity for glucose than do the other hexokinases .Hexokinase 2 is the predominant hexokinase isozyme expressed in insulin-responsive tissues such as skeletal muscle. Expression of this gene is insulin-responsive, and studies in rat suggest that it is involved in the increased rate of glycolysis seen in rapidly growing cancer cells.
Immunogen	Purified recombinant fragment of human HK2 expressed in E. Coli.
Formulation	Ascitic fluid containing 0.03% sodium azide.

Additional Information

Gene ID	3099
Other Names	Hexokinase-2, 2.7.1.1, Hexokinase type II, HK II, Muscle form hexokinase, HK2
Dilution	WB~~1/500 - 1/2000 IHC~~1/200 - 1/1000 FC~~1/200 - 1/400 E~~N/A
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	HK2 Antibody 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

References

1. Cell. 2006 May 19;125(4):801-14. 2. Cancer Sci. 2008 Feb;99(2):260-6. 3. Med Oncol. 2009;26(3):303-8.

Images

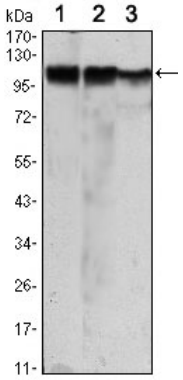


Figure 1: Western blot analysis using HK2 mouse mAb against Jurkat (1), Hela (2) and HEK293 (3) cell lysate.

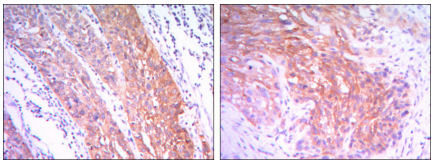
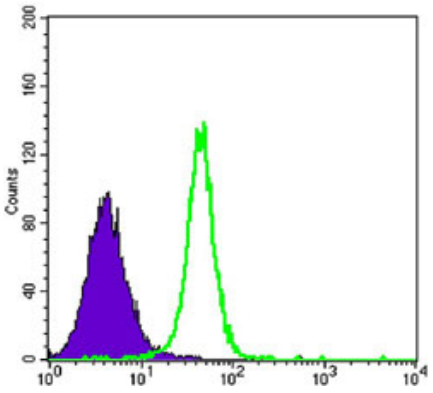


Figure 2: Immunohistochemical analysis of paraffin-embedded esophagus cancer tissues (left) and human lung cancer (right) using HK2 mouse mAb with DAB staining.

Figure 3: Flow cytometric analysis of K562 cells using HK2 mouse mAb (green) and negative control (purple).



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