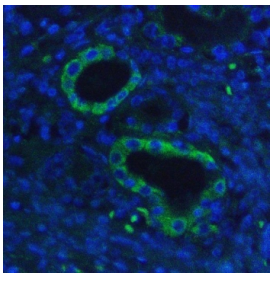
HK1 Antibody 4B7 / Glycolysis Enzyme Antibody [clone 4B7] (RQ5660)

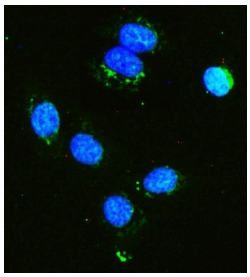
Catalog No.	Formulation	Size
RQ5660	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

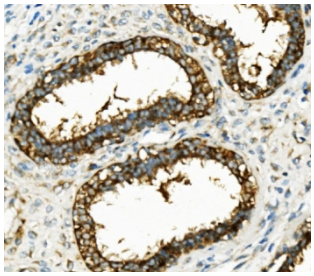
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Mouse
Clonality	Monoclonal
Isotype	Mouse IgG2a
Clone Name	4B7
Purity	Affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose and 0.025% sodium azide
UniProt	P19367
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 1-2ug/ml Immunofluorescence: 2-4ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This HK1 Antibody 4B7 / Glycolysis Enzyme Antibody is available for research use only.



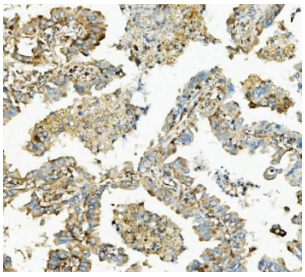
HK1 Antibody 4B7 in Human Lung Cancer IF. Immunofluorescence testing of clone 4B7 in FFPE human lung cancer tissue. HIER was performed by steaming tissue sections in pH 6 citrate buffer for 20 min. HK1 immunoreactivity (green) is observed predominantly in the cytoplasm of epithelial cells, with DAPI nuclear counterstaining shown in blue.



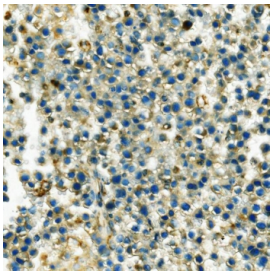
HK1 Antibody 4B7 in Human U-2 OS Osteosarcoma Cells IF. Immunofluorescence testing of clone 4B7 in FFPE human U-2 OS osteosarcoma cells. HIER was performed by steaming in pH 6 citrate buffer for 20 min. HK1 immunoreactivity (green) is observed predominantly in the cytoplasm, with a punctate to granular distribution consistent with the mitochondrial-associated localization of this glycolysis enzyme. Nuclei are counterstained with DAPI (blue).



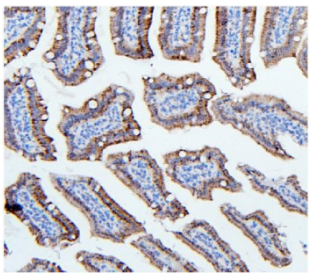
Immunohistochemistry testing of clone 4B7 in FFPE human breast cancer tissue. HIER was performed by boiling tissue sections in pH 8 EDTA for 20 min followed by cooling before testing. Strong HK1 immunoreactivity is observed predominantly in the cytoplasm of glandular tumor cells.



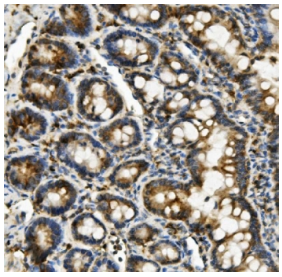
HK1 Antibody 4B7 in Human Lung Cancer IHC. Immunohistochemistry testing of clone 4B7 in FFPE human lung cancer tissue. HIER was performed by boiling tissue sections in pH 8 EDTA for 20 min followed by cooling before testing. Strong HK1 immunoreactivity is observed predominantly in the cytoplasm and along the cell periphery of tumor cells.



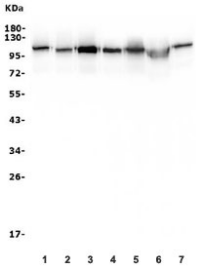
HK1 Antibody 4B7 in Human Testis Cancer IHC. Immunohistochemistry testing of clone 4B7 in FFPE human testis cancer tissue. HIER was performed by boiling tissue sections in pH 8 EDTA for 20 min followed by cooling before testing. HK1 immunoreactivity is observed predominantly in the cytoplasm of cells within the tumor tissue.



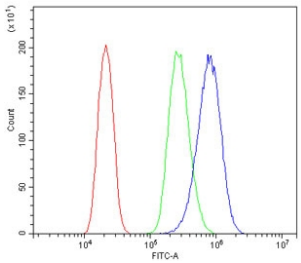
HK1 Antibody 4B7 in Mouse Intestine IHC. Immunohistochemistry testing of clone 4B7 in FFPE mouse intestine tissue. HIER was performed by boiling tissue sections in pH 8 EDTA for 20 min followed by cooling before testing. Strong HK1 immunoreactivity is observed in intestinal epithelial cells, with prominent cytoplasmic staining along the villous epithelium.



HK1 Antibody 4B7 in Rat Intestine IHC. Immunohistochemistry testing of clone 4B7 in FFPE rat intestine tissue. HIER was performed by boiling tissue sections in pH 8 EDTA for 20 min followed by cooling before testing. Strong HK1 immunoreactivity is observed predominantly in the cytoplasm of intestinal epithelial cells.



HK1 Antibody 4B7 in Human, Rat and Mouse Cell Lysates WB. Western blot testing of clone 4B7 in 1) human HeLa, 2) human HEK293, 3) human U-87 MG, 4) human K562, 5) human A549, 6) rat PC-12 and 7) mouse NIH 3T3 cell lysates. A strong, discrete HK1 band is observed at approximately 100-110 kDa across all seven samples. The observed migration is consistent with full-length hexokinase-1 and demonstrates detection in human, rat and mouse lysates.



HK1 Antibody 4B7 in Human PC-3 Prostate Cancer Cells FACS. Flow cytometry testing of clone 4B7 in human PC-3 prostate cancer cells at 1 ug/million cells following blocking with goat sera. The HK1 antibody-stained population (blue) shows a strong fluorescence shift relative to the isotype control (green) and cells-alone control (red), demonstrating detection of HK1 under the tested conditions.

Description

HK1 Antibody 4B7 / Glycolysis Enzyme Antibody recognizes hexokinase-1, a member of the hexokinase family of glucose-phosphorylating enzymes. HK1 catalyzes the ATP-dependent conversion of glucose to glucose-6-phosphate, an early and essential step in cellular glucose metabolism. By trapping glucose within the cell in a phosphorylated form, hexokinase activity helps direct glucose into pathways including glycolysis, glycogen synthesis and the pentose phosphate pathway. HK1 is widely expressed and contributes to maintaining basal glucose utilization in many tissues.

Human HK1 is an approximately 100 kDa protein containing two homologous hexokinase domains that arose through evolutionary duplication. Catalytic activity resides primarily in the C-terminal portion of the protein, while the N-terminal region contributes regulatory functions. HK1 activity is inhibited by its product, glucose-6-phosphate, providing a mechanism for coordinating glucose phosphorylation with cellular metabolic demand.

A distinguishing feature of HK1 is its association with the outer mitochondrial membrane, where it can interact with voltage-dependent anion channels. This localization places hexokinase-1 near mitochondrial ATP production and can facilitate efficient coupling of glucose phosphorylation with cellular energy metabolism. Mitochondrial HK1 has also been investigated in the regulation of cell survival and apoptosis, providing connections between glucose metabolism, mitochondrial function and cellular stress responses. Altered hexokinase expression and mitochondrial association are consequently of interest in metabolic biology and cancer research.

HK1 is encoded by the HK1 gene, and alternative splicing generates multiple transcript variants, including forms with tissue-specific expression. Pathogenic HK1 variants have been associated with disorders including nonspherocytic hemolytic anemia caused by hexokinase deficiency as well as neurological phenotypes, underscoring the importance of regulated glucose metabolism in both erythrocytes and metabolically active tissues.

Clone 4B7 is a mouse monoclonal antibody generated against recombinant human HK1 protein corresponding to amino acids D17-R323. NSJ Bioreagents provides this HK1 Antibody for research into glucose metabolism, mitochondrial biology and metabolic regulation. A Glycolysis Enzyme Antibody directed against HK1 can support studies of the mechanisms linking glucose phosphorylation with cellular energy metabolism.

Explore our Mitochondria Marker Antibody page for additional reagents targeting proteins associated with mitochondrial structure, metabolism and cellular energy regulation.

Application Notes

Optimal dilution of the HK1 Antibody 4B7 / Glycolysis Enzyme Antibody should be determined by the researcher.

Immunogen

Recombinant human protein (amino acids D17-R323) was used as the immunogen for the HK1 antibody.

Storage

After reconstitution, the HK1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

HK1 antibody, Hexokinase 1 antibody, Hexokinase-1 antibody, Hexokinase I antibody, Brain Hexokinase antibody

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