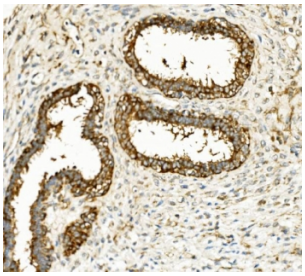
HK1 Antibody 2I4 / Mitochondrial Hexokinase Antibody [clone 2I4] (RQ5659)

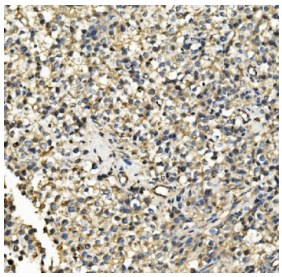
Catalog No.	Formulation	Size
RQ5659	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

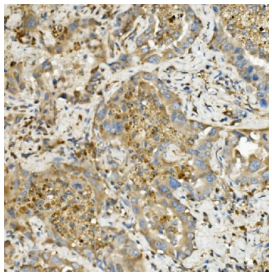
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Mouse
Clonality	Monoclonal
Isotype	Mouse IgG2b
Clone Name	2I4
Purity	Affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose and 0.025% sodium azide
UniProt	P19367
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry: 1-2ug/ml Immunofluorescence: 2-4ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This HK1 Antibody 2I4 / Mitochondrial Hexokinase Antibody is available for research use only.



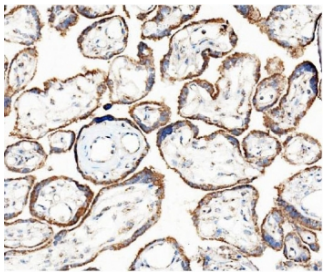
HK1 Antibody 2I4 in Human Breast Cancer IHC. Immunohistochemistry testing of HK1 Antibody 2I4 / Mitochondrial Hexokinase Antibody in FFPE human breast cancer tissue. HIER was performed by boiling tissue sections in pH 8 EDTA for 20 min followed by cooling before testing. Strong HK1 immunoreactivity is observed in glandular epithelial structures, with predominantly cytoplasmic staining.



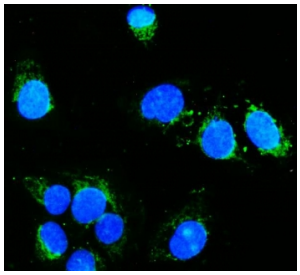
HK1 Antibody 2I4 in Human Testis Cancer IHC. Immunohistochemistry testing of HK1 Antibody 2I4 / Mitochondrial Hexokinase Antibody in FFPE human testis cancer tissue. HIER was performed by boiling tissue sections in pH 8 EDTA for 20 min followed by cooling before testing. HK1 immunoreactivity is observed predominantly in the cytoplasm of tumor cells.



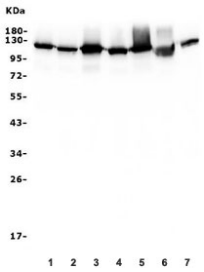
HK1 Antibody 2I4 in Human Lung Cancer IHC. Immunohistochemistry testing of HK1 Antibody 2I4 / Mitochondrial Hexokinase Antibody in FFPE human lung cancer tissue. HIER was performed by boiling tissue sections in pH 8 EDTA for 20 min followed by cooling before testing. HK1 immunoreactivity is observed predominantly in the cytoplasm of tumor cells.



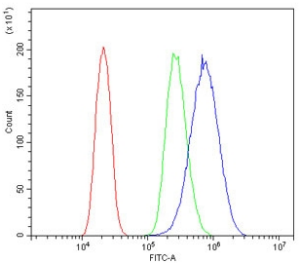
HK1 Antibody 2I4 in Frozen Human Placenta IHC. Immunohistochemistry testing of HK1 Antibody 2I4 / Mitochondrial Hexokinase Antibody in frozen human placenta tissue. Strong HK1 immunoreactivity is observed along placental villous structures, with prominent staining of the trophoblastic cell layer.



HK1 Antibody 2I4 in Human HeLa Cervical Cancer Cells IF. Immunofluorescence testing of HK1 Antibody 2I4 / Mitochondrial Hexokinase Antibody in FFPE human HeLa cervical cancer cells. HIER was performed by steaming in pH 6 citrate buffer for 20 min. HK1 immunoreactivity (green) shows a punctate and granular cytoplasmic distribution surrounding the nuclei, compatible with the mitochondrial association of HK1. Nuclei are counterstained with DAPI (blue).



HK1 Antibody 2I4 in Human, Rat and Mouse Cell Lysates WB. Western blot testing of HK1 Antibody 2I4 / Mitochondrial Hexokinase Antibody 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 predominant HK1 band is observed at approximately 100-110 kDa across all seven samples, consistent with the predicted molecular weight of ~102 kDa.



HK1 Antibody 2I4 in Human PC-3 Prostate Cancer Cells FACS. Flow cytometry testing of HK1 Antibody 2I4 / Mitochondrial Hexokinase Antibody in human PC-3 prostate cancer cells at 1 ug/million cells following blocking with goat sera. HK1 staining (blue) shows a clear fluorescence shift relative to the isotype control (green) and cells-alone control (red).

Description

HK1 Antibody 2I4 / Mitochondrial Hexokinase Antibody recognizes hexokinase-1, a glucose-metabolizing enzyme encoded by the HK1 gene. HK1 catalyzes the ATP-dependent phosphorylation of glucose to glucose-6-phosphate, an essential early step in cellular glucose metabolism. This reaction traps glucose within the cell and provides glucose-6-phosphate for pathways including glycolysis, glycogen synthesis and the pentose phosphate pathway. Through this activity, hexokinase-1 helps regulate glucose utilization, energy production and the distribution of glucose-derived metabolites.

Hexokinase-1 is an approximately 100 kDa member of the mammalian hexokinase family. The protein contains homologous N- and C-terminal domains that arose through an ancestral gene duplication. The C-terminal domain provides the principal catalytic activity, while the N-terminal region contributes important regulatory functions. HK1 activity is subject to feedback inhibition by glucose-6-phosphate, allowing glucose phosphorylation to respond to the metabolic state and energy requirements of the cell.

A defining feature of HK1 is its association with the outer mitochondrial membrane. An N-terminal mitochondrial-binding region enables interaction with proteins including voltage-dependent anion channels, positioning hexokinase-1 near a source of mitochondrially generated ATP. This localization can facilitate coordination between glucose phosphorylation and oxidative energy metabolism. Mitochondrial HK1 has also been investigated in relation to mitochondrial membrane integrity, cellular stress and apoptosis, connecting metabolic regulation with mechanisms that influence cell survival.

HK1 is broadly important for basal glucose metabolism, while alternative splicing generates multiple transcript variants with specialized expression patterns. Pathogenic variants in HK1 can impair glucose metabolism and are associated with disorders including hexokinase deficiency and nonspherocytic hemolytic anemia. Other HK1 variants have been linked to neurological and developmental phenotypes, emphasizing the importance of appropriate hexokinase activity in maintaining cellular energy homeostasis.

Clone 2I4 is a mouse monoclonal antibody generated against recombinant human HK1 corresponding to amino acids D17-R323. NSJ Bioreagents provides this HK1 Antibody for research into glucose metabolism, mitochondrial biology and cellular energy regulation. A Mitochondrial Hexokinase Antibody can support investigation of the relationship between hexokinase-1, glucose phosphorylation and mitochondrial energy metabolism.

For additional information on hexokinase-1 biology and complementary antibody validation, visit our HK1 Antibody 4B7 / Glycolysis Enzyme Antibody page.

Application Notes

Optimal dilution of the HK1 Antibody 2I4 / Mitochondrial Hexokinase 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, Mitochondrial Hexokinase antibody

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