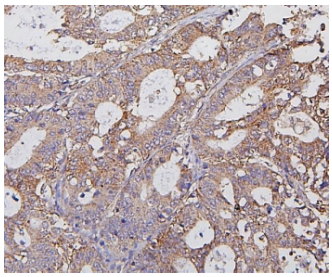
Hexokinase 1 Antibody / Brain Hexokinase Antibody (RQ5501)

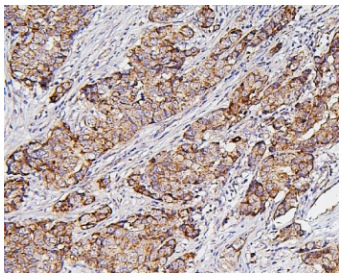
Catalog No.	Formulation	Size
RQ5501	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

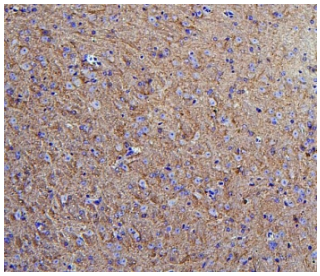
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose and 0.025% sodium azide
UniProt	P19367
Applications	Western blot: 0.25-0.5ug/ml Immunohistochemistry (FFPE): 1-2ug/ml Immunofluorescence: 2-4ug/ml Direct ELISA: 0.1-0.5ug/ml
Limitations	This Hexokinase 1 Antibody / Brain Hexokinase Antibody is available for research use only.



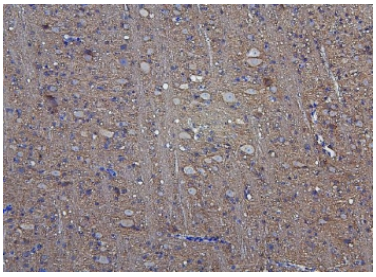
Hexokinase 1 Antibody in Human Rectal Cancer IHC. Immunohistochemistry testing of Hexokinase 1 Antibody / Brain Hexokinase Antibody in FFPE human rectal cancer tissue. HIER was performed by boiling tissue sections in pH 8 EDTA for 20 min followed by cooling before testing. Strong HK1 immunoreactivity is observed predominantly in the cytoplasm of tumor cells.



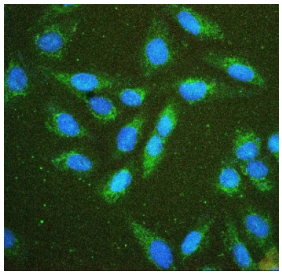
Hexokinase 1 Antibody in Human Breast Cancer IHC. Immunohistochemistry testing of Hexokinase 1 Antibody / Brain Hexokinase Antibody in FFPE human breast cancer tissue. HIER was performed by boiling tissue sections in pH 8 EDTA for 20 min followed by cooling before testing. Strong HK1 immunoreactivity is observed predominantly in the cytoplasm of tumor cells.



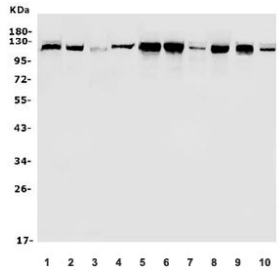
Hexokinase 1 Antibody in Mouse Brain IHC. Immunohistochemistry testing of Hexokinase 1 Antibody / Brain Hexokinase Antibody in FFPE mouse brain tissue. HIER was performed by boiling tissue sections in pH 8 EDTA for 20 min followed by cooling before testing. Widespread HK1 immunoreactivity is observed throughout the brain tissue, with predominantly cytoplasmic staining.



Hexokinase 1 Antibody in Rat Brain IHC. Immunohistochemistry testing of Hexokinase 1 Antibody / Brain Hexokinase Antibody in FFPE rat brain tissue. HIER was performed by boiling tissue sections in pH 8 EDTA for 20 min followed by cooling before testing. HK1 immunoreactivity is observed throughout the tissue, including prominent cytoplasmic staining of neuronal cell bodies.



Hexokinase 1 Antibody in Human U-2 OS Osteosarcoma Cells IF. Immunofluorescence testing of Hexokinase 1 Antibody / Brain Hexokinase Antibody 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 granular distribution surrounding the nuclei. Nuclei are counterstained with DAPI (blue).



Hexokinase 1 Antibody in Human, Rat and Mouse Lysates WB. Western blot testing of Hexokinase 1 Antibody / Brain Hexokinase Antibody in 1) human placenta, 2) human U-2 OS, 3) human HEK293, 4) human A549, 5) rat brain, 6) rat heart, 7) rat lung, 8) mouse brain, 9) mouse heart and 10) mouse lung lysates. A predominant HK1 band is observed at approximately 100-110 kDa across all 10 samples, consistent with the predicted molecular weight of ~102 kDa.

Description

Hexokinase 1 Antibody / Brain 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, trapping glucose within the cell and committing it to subsequent metabolic pathways. Glucose-6-phosphate can enter glycolysis for energy production or be directed toward pathways including glycogen synthesis and the pentose phosphate pathway. Through this activity, HK1 contributes to the regulation of cellular glucose utilization and energy metabolism.

Hexokinase-1 is an approximately 100 kDa member of the mammalian hexokinase family. Its structure contains homologous N- and C-terminal domains resulting from an ancestral gene duplication. The C-terminal domain provides the

principal catalytic activity, while the N-terminal region contributes regulatory functions. HK1 is subject to feedback inhibition by glucose-6-phosphate, allowing glucose phosphorylation to respond to the metabolic state of the cell.

A characteristic feature of HK1 is its ability to associate with the outer mitochondrial membrane through interactions with voltage-dependent anion channels. Mitochondrial localization places the enzyme near a source of ATP and helps coordinate glucose phosphorylation with oxidative energy metabolism. This association has also connected HK1 to research into mitochondrial physiology, cellular stress and apoptosis. Hexokinase-1 is widely expressed but is particularly important in tissues with substantial and continuous energy requirements, including the nervous system, which contributed to its historical description as brain hexokinase.

Changes in HK1 function can disrupt both systemic and tissue-specific metabolism. Pathogenic variants have been associated with hexokinase deficiency and nonspherocytic hemolytic anemia, while other HK1 alterations are associated with neurological and developmental phenotypes. These relationships make hexokinase-1 relevant to research spanning glucose metabolism, mitochondrial function, cellular energetics and disease biology.

This rabbit polyclonal antibody was generated against recombinant human HK1 corresponding to amino acids 343-584 and is antigen affinity purified. NSJ Bioreagents provides this Hexokinase 1 Antibody for research into glucose metabolism, mitochondrial biology and cellular energy regulation. A Brain Hexokinase Antibody can support investigation of HK1 and the mechanisms connecting glucose phosphorylation with cellular energy requirements.

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 Hexokinase 1 Antibody / Brain Hexokinase Antibody should be determined by the researcher.

Immunogen

A human recombinant protein (amino acids D17-R323) was used as the immunogen for the Hexokinase 1 antibody.

Storage

After reconstitution, the Hexokinase 1 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

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

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