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Anti-Hexokinase II/HK2 Antibody Picoband®

Catalog Number: A01389

About HK2

Hexokinase 2, also known as HK2, is an enzyme which in humans is encoded by the HK2 gene on chromosome 2. Hexokinases phosphorylate glucose to produce glucose-6-phosphate, the first step in most glucose metabolism pathways. This gene encodes hexokinase 2, the predominant form found in skeletal muscle. It localizes to the outer membrane of mitochondria. 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.

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Overview

Product Name	Anti-Hexokinase II/HK2 Antibody Picoband®
Reactive Species	Human, Mouse, Rat
Description	Boster Bio Anti-Hexokinase II/HK2 Antibody Picoband® catalog # A01389. Tested in Flow Cytometry, IHC, WB applications. This antibody reacts with Human, Mouse, Rat. The brand Picoband indicates this is a premium antibody that guarantees superior quality, high affinity, and strong signals with minimal background in Western blot applications. Only our best-performing antibodies are designated as Picoband, ensuring unmatched performance.
Application	Flow Cytometry, IHC, WB
Clonality	Polyclonal
Formulation	Each vial contains 4 mg Trehalose, 0.9 mg NaCl and 0.2 mg Na2HPO4.
Storage Instructions	Store at -20˚C for one year from date of receipt. After reconstitution, at 4˚C for one month. It can also be aliquotted and stored frozen at -20˚C for six months. Avoid repeated freeze-thaw cycles.
Host	Rabbit
Uniprot ID	P52789

Technical Details

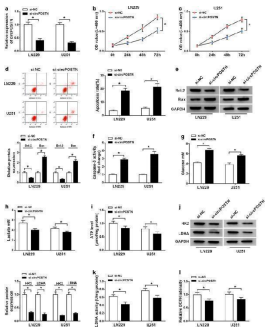
Immunogen	A synthetic peptide corresponding to a sequence in the middle region of human Hexokinase II, different from the related mouse and rat sequences by four amino acids.
Cross Reactivity	No cross-reactivity with other proteins.

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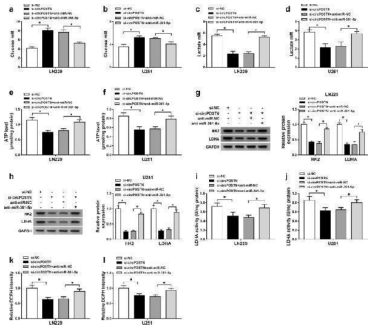
Isotype	Rabbit IgG
Form	Lyophilized
Concentration	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.
Purification	Immunogen affinity purified.
Suggested Dilutions	Western blot, 0.1-0.5ug/ml, Human, Mouse, Rat Immunohistochemistry (Paraffin-embedded Section), 2-5ug/ml, Human, Mouse, Rat Flow Cytometry(Fixed), 1-3 ug/1x10^6 cells, Human Note: For flow cytometry (FCM), suitable for fixed cells only. Not suitable for FACS or surface flow cytometry using live cells.

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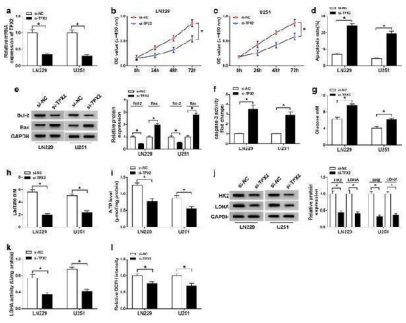
Anti-Hexokinase II/HK2 Antibody Picoband® (A01389) Images



The influences of circPOSTN silencing on proliferation, apoptosis and aerobic glycolysis of glioma cells. a – l LN229 and U251 cells were transfected with si-circPOSTN or si-NC. a The interference efficiency of si-circPOSTN was analyzed with RT-qPCR assay in LN229 and U251 cells. b , c Effect of circPOSTN silencing on the cell viability of LN229 and U251 cells was assessed with MTT assay. d The apoptosis rate was computed with flow cytometry assay in transfected LN229 and U251 cells. e The western blot assay showed the expression levels of Bcl-2 and Bax in LN229 and U251 cells. f The caspase-3 activity was measured with a caspase-3 assay kit. g – i The concentration of glucose and lactate in the culture medium, as well as ATP production level were measured with a series of kits, respectively. j The protein expression levels of HK2 and LDHA were determined with western blot assay in transfected LN229 and U251 cells. k – l LDHA enzyme activity and ROS accumulation were evaluated in LN229 and U251 cells post-transfection with lactate dehydrogenase activity detection kit and reactive oxygen species assay kit, respectively. * P < 0.05 Index in PubMed under a CC BY license. PMID: 32774168

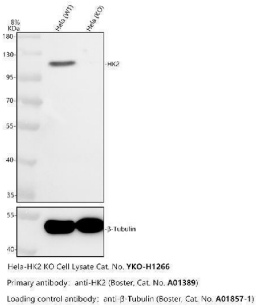


CircPOSTN silencing inhibited aerobic glycolysis of glioma cells via regulating miR-361-5p. a – l LN229 and U251 cells were transfected with si-NC, si-circPOSTN, si-circPOSTN + anti-miR-NC, or si-circPOSTN + anti-miR-361-5p. a – f The concentration of glucose and lactate, as well as cellular ATP level were detected with different kits. g , h The protein expression levels of HK2 and LDHA in LN229 and U251 cells were measured with western blot assay. i – l The enzyme activity of LDHA and ROS level were measured in transfected LN229 and U251 cells. * P < 0.05 Index in PubMed under a CC BY license. PMID: 32774168

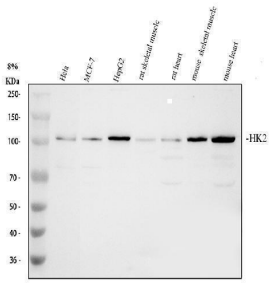


TPX2 regulated proliferation, apoptosis, and aerobic glycolysis in glioma cells. a – l LN229 and U251 cells were introduced with si-NC or si-TPX2. a The transfection efficiency of si-TPX2 was checked with RT-qPCR assay in LN229 and U251 cells. b , c The cell viability of LN229 and U251 cells was determined with MTT assay. d The apoptosis rate of transfected LN229 and U251 cells was represented by flow cytometry assay. e The western blot assay was used to assay the expression levels of Bcl-2 and Bax in LN229 and U251 cells. f The activity of caspase-3 was detected with a caspase-3 assay kit. g – i The glucose, lactate, and ATP production levels were shown. j The protein expression levels of HK2 and LDHA were estimated by western blot assay in LN229 and U251 cells. k , l LDHA enzyme activity and ROS content were evaluated in LN229 and U251 cells post-transfection. * P < 0.05 Index in PubMed under a CC BY license. PMID: 32774168

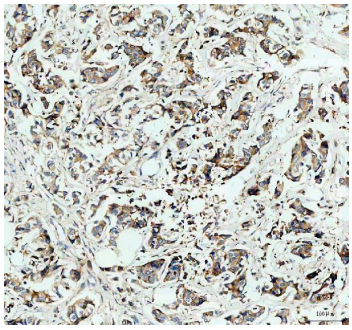
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Western blot analysis of Hexokinase 2/HK2 using anti-Hexokinase 2/HK2 antibody (A01389). Electrophoresis was performed on a 8% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: human Hela- WT whole cell lysates, Lane 2: human Hela-HK2 KO whole cell lysates.After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-Hexokinase 2/HK2 antigen affinity purified polyclonal antibody (A01389) at 0.5 ug/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an ECL Plus Western Blotting Substrate (Catalog # AR1196-200) with Tanon 5200 system. A specific band was detected for Hexokinase 2/HK2 at approximately 102 kDa. The expected band size for Hexokinase 2/HK2 is at 102 kDa.

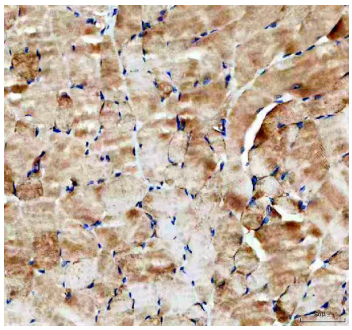


Western blot analysis of Hexokinase II using anti-Hexokinase II antibody (A01389). Electrophoresis was performed on a 8% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: human Hela whole cell lysates, Lane 2: human MCF-7 whole cell lysates, Lane 3: human HepG2 whole cell lysates, Lane 4: rat skeletal muscle tissue lysates, Lane 5: rat heart tissue lysates, Lane 6: mouse skeletal muscle tissue lysates, Lane 7: mouse heart tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-Hexokinase II antigen affinity purified polyclonal antibody (A01389) at 0.5 ug/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody (Catalog # BA1054) at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an ECL Plus Western Blotting Substrate (Catalog # AR1196-200) with Tanon 5200 system. A specific band was detected for Hexokinase II at approximately 102 kDa. The expected band size for Hexokinase II is at 102 kDa.

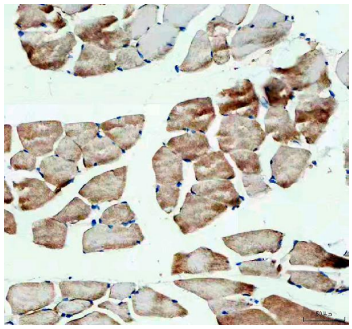


IHC analysis of Hexokinase II using anti-Hexokinase II antibody (A01389). Hexokinase II was detected in a paraffin-embedded section of human breast cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-Hexokinase II Antibody (A01389) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.

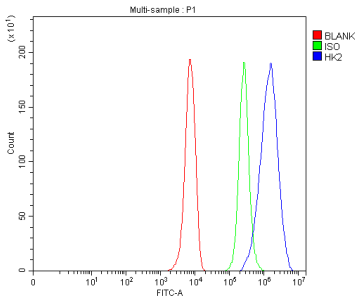
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IHC analysis of Hexokinase II using anti-Hexokinase II antibody (A01389). Hexokinase II was detected in a paraffin-embedded section of mouse skeletal muscle tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-Hexokinase II Antibody (A01389) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.



IHC analysis of Hexokinase II using anti-Hexokinase II antibody (A01389). Hexokinase II was detected in a paraffin-embedded section of rat skeletal muscle tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-Hexokinase II Antibody (A01389) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.



Flow Cytometry analysis of HepG2 cells using anti-Hexokinase II antibody (A01389). Overlay histogram showing HepG2 cells stained with A01389 (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-Hexokinase II Antibody (A01389, 1 ug/1x106 cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-rabbit IgG (BA1127, 5-10 ug/1x106 cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was rabbit IgG (1 ug/1x106) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.

Anti-Hexokinase II/HK2 Antibody

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