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Anti-LDHA Antibody Picoband®

Catalog Number: PB10075

About LDHA

Lactate dehydrogenase A, also known as LDHA, is an enzyme which in humans is encoded by the LDHA gene. The protein encoded by this gene catalyzes the conversion of L-lactate and NAD to pyruvate and NADH in the final step of anaerobic glycolysis. The protein is found predominantly in muscle tissue and belongs to the lactate dehydrogenase family. Mutations in this gene have been linked to exertional myoglobinuria. Multiple transcript variants encoding different isoforms have been found for this gene. The human genome contains several non-transcribed pseudogenes of this gene.

Overview

Product Name	Anti-LDHA Antibody Picoband®
Reactive Species	Human, Mouse, Rat
Description	Boster Bio Anti-LDHA Antibody Picoband® catalog # PB10075. Tested in Flow Cytometry, IF, IHC, ICC, 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, IF, IHC, ICC, WB
Clonality	Polyclonal
Formulation	Each vial contains antibody formulated with stabilizing components, 0.9 mg NaCl, 0.2 mg Na2HPO4, and 0.05 mg NaN3. *This antibody is supplied in a stabilized formulation. Compatibility with conjugation reactions depends on the chemistry of the conjugation method used. For conjugation methods that are not compatible with the stabilizing components present in this formulation, a carrier-free antibody format is required.
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	P00338

Technical Details

Immunogen	E. coli-derived human LDHA recombinant protein (Position: A2-R106). Human LDHA shares 94.3% amino acid (aa) sequence identity with both mouse and rat LDHA.
Recommended Detection Systems	Boster recommends Enhanced Chemiluminescent Kit with anti-Rabbit IgG (EK1002) for Western blot, and HRP Conjugated anti-Rabbit IgG Super Vision Assay Kit (SV0002-1) for IHC(P) and ICC.

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Cross Reactivity	No cross-reactivity with other proteins
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), 0.5-1ug/ml, Human, Mouse, Rat Immunocytochemistry/Immunofluorescence, 2ug/ml, Human Flow Cytometry (Fixed), 1-3ug/1x10^6 cells, Human

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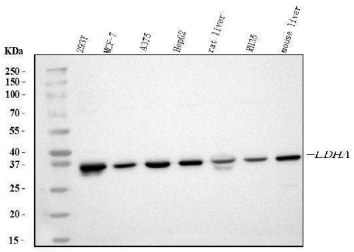
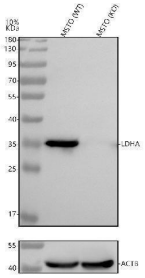
Anti-LDHA Antibody Picoband® (PB10075) Images



Western blot analysis of LDHA using anti-LDHA antibody (PB10075). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: human 293T whole cell lysates, Lane 2: human MCF-7 whole cell lysates, Lane 3: human A375 whole cell lysates, Lane 4: human HepG2 whole cell lysates, Lane 5: rat liver tissue lysates, Lane 6: rat RH35 whole cell lysates, Lane 7: mouse liver 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-LDHA antigen affinity purified polyclonal antibody (Catalog # PB10075) 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 Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1002) with Tanon 5200 system. A specific band was detected for LDHA at approximately 37 kDa. The expected band size for LDHA is at 37 kDa.



Western blot analysis of LDHA using anti-LDHA antibody (PB10075). Electrophoresis was performed on a 10% 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 MSTO-211H- WT whole cell lysates, Lane 2: human MSTO-211H-LDHA 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. Then the membrane was incubated with rabbit anti-LDHA antigen affinity purified polyclonal antibody (PB10075) 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 LDHA at approximately 37 kDa. The expected band size for LDHA is at 37 kDa.

IHC analysis of LDHA using anti-LDHA antibody (PB10075). LDHA was detected in a paraffin-embedded section of mouse intestine 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 1 ug/ml rabbit anti-LDHA Antibody (PB10075) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary

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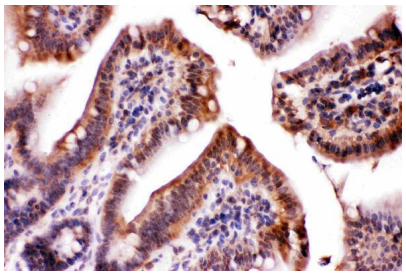
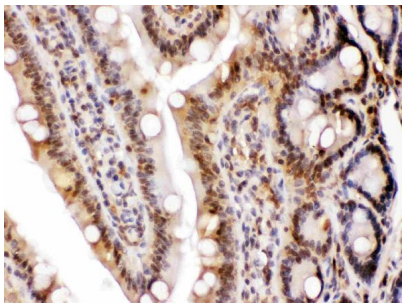
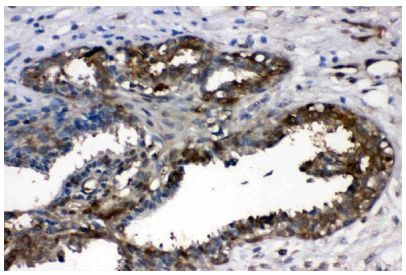


antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1022) with DAB as the chromogen.



IHC analysis of LDHA using anti-LDHA antibody (PB10075). LDHA was detected in a paraffin-embedded section of rat intestine 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 1 ug/ml rabbit anti-LDHA Antibody (PB10075) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1022) with DAB as the chromogen.



IHC analysis of LDHA using anti-LDHA antibody (PB10075). LDHA was detected in a paraffin-embedded section of human mammary 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 1 ug/ml rabbit anti-LDHA Antibody (PB10075) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1022) with DAB as the chromogen.

IHC analysis of LDHAusing anti-LDHA antibody (PB10075). LDHA was detected in a paraffin-embedded section of mouse muscle skeletal 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 1 ug/ml rabbit anti-LDHA Antibody (PB10075) overnight at 4°C. HRP-AffiniPure 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 LDHA using anti-LDHA antibody (PB10075). LDHA was detected in a paraffin-embedded section of rat muscle skeletal 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 1 ug/ml rabbit anti-LDHA Antibody (PB10075) overnight at 4°C. HRP-AffiniPure Goat Anti-Rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue

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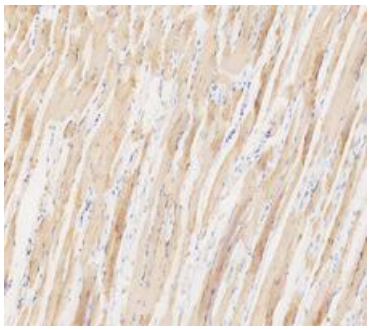
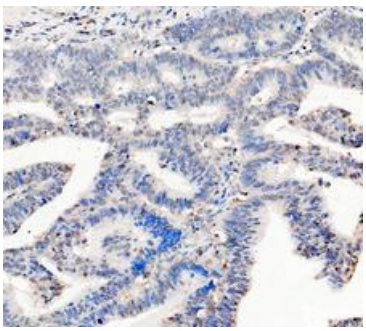
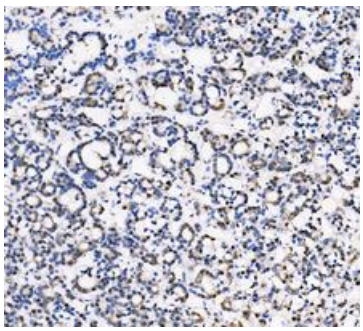


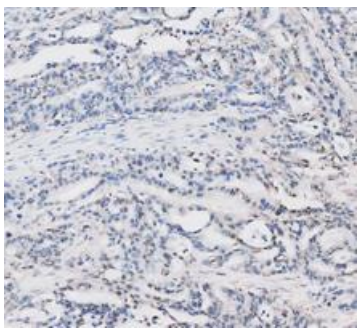
section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.



IHC analysis of LDHA using anti-LDHA antibody (PB10075). LDHA was detected in a paraffin-embedded section of human stomach 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 1 ug/ml rabbit anti-LDHA Antibody (PB10075) overnight at 4°C. HRP-AffiniPure 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 LDHA using anti-LDHA antibody (PB10075). LDHA was detected in a paraffin-embedded section of human thyroid 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 1 ug/ml rabbit anti-LDHA Antibody (PB10075) overnight at 4°C. HRP-AffiniPure 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 LDHA using anti-LDHA antibody (PB10075). LDHA was detected in a paraffin-embedded section of human pancreas 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 1 ug/ml rabbit anti-LDHA Antibody (PB10075) overnight at 4°C. HRP-AffiniPure 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.

IF analysis of LDHA using anti-LDHA antibody (PB10075). LDHA was detected in immunocytochemical section of U20S cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then

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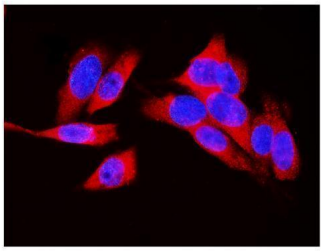
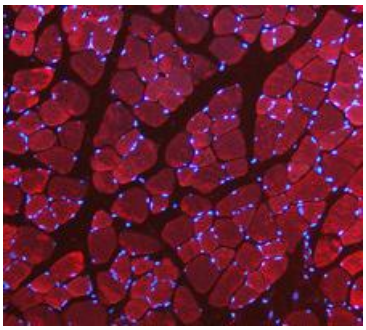
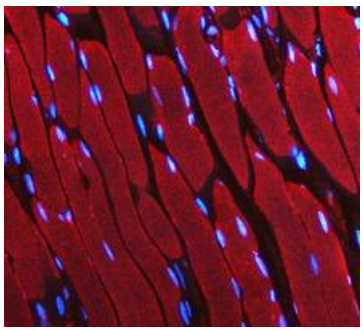


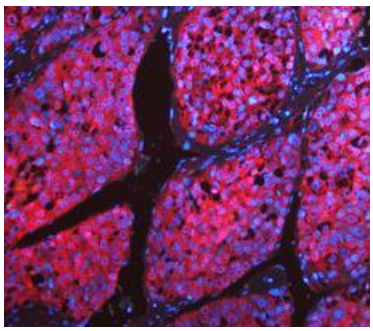
incubated with 2ug/mL rabbit anti-LDHA Antibody (PB10075) overnight at 4°C. DyLight®594 Conjugated Goat Anti-Rabbit IgG (BA1142) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



IF analysis of LDHA using anti-LDHA antibody (PB10075). LDHA was detected in a paraffin-embedded section of mouse muscle skeletal 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 25 ug/mL rabbit anti-LDHA Antibody (PB10075) overnight at 4°C. DyLight®594 Conjugated Goat Anti-Rabbit IgG (BA1142) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



IF analysis of LDHA using anti-LDHA antibody (PB10075). LDHA was detected in a paraffin-embedded section of rat muscle skeletal 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 25 ug/mL rabbit anti-LDHA Antibody (PB10075) overnight at 4°C. DyLight®594 Conjugated Goat Anti-Rabbit IgG (BA1142) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



IF analysis of LDHA using anti-LDHA antibody (PB10075). LDHA was detected in a paraffin-embedded section of human liver 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 25 ug/mL rabbit anti-LDHA Antibody (PB10075) overnight at 4°C. DyLight®594 Conjugated Goat Anti-Rabbit IgG (BA1142) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

IF analysis of LDHA using anti-LDHA antibody (PB10075). LDHA was detected in a paraffin-embedded section of human stomach 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 25

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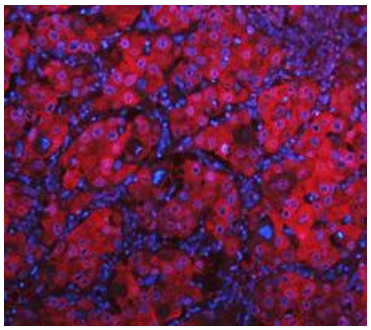
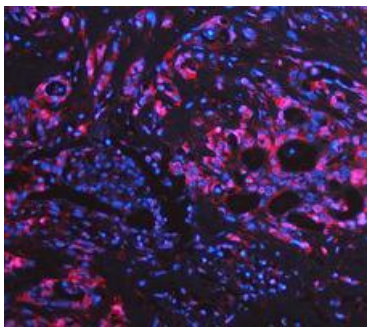
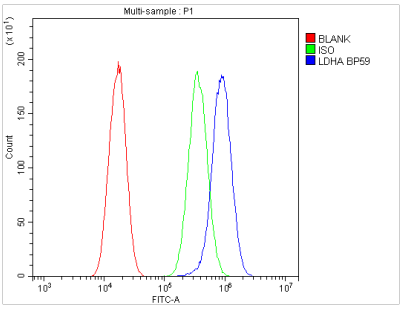


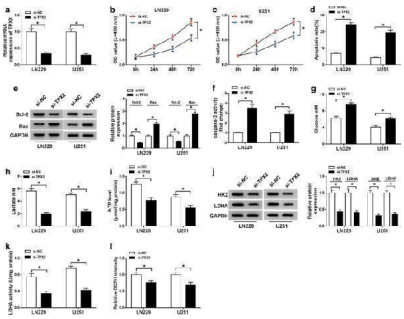
ug/mL rabbit anti-LDHA Antibody (PB10075) overnight at 4°C. DyLight®594 Conjugated Goat Anti-Rabbit IgG (BA1142) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



IF analysis of LDHA using anti-LDHA antibody (PB10075). LDHA was detected in a paraffin-embedded section of human pancreas 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 25 ug/mL rabbit anti-LDHA Antibody (PB10075) overnight at 4°C. DyLight®594 Conjugated Goat Anti-Rabbit IgG (BA1142) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Flow Cytometry analysis of A549 cells using anti-LDHA antibody (PB10075). Overlay histogram showing A549 cells stained with PB10075 (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-LDHA Antibody (PB10075,1ug/1x106 cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-rabbit IgG (BA1127, 5-10ug/1x106 cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was rabbit IgG (1ug/1x106) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



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

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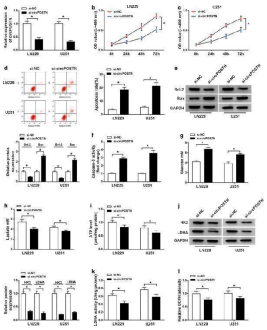
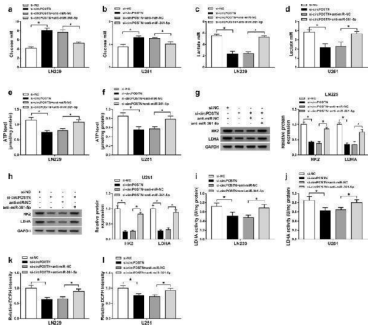
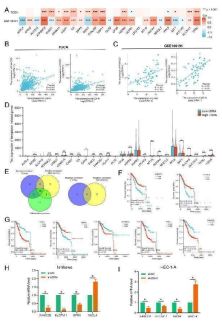


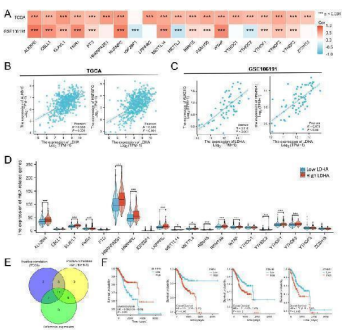
The influences of circPOSTN silencing on proliferation, apoptosis and aerobic glycolysis of glioma cells. a – l LN229 and U251 cells were transfected with si-circPOSTN or si-NC. a The interference efficiency of si-circPOSTN was analyzed with RT-qPCR assay in LN229 and U251 cells. b , c Effect of circPOSTN 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



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



Associations between LDHA expression and ferroptosis-related genes in EC. (A) Connection of LDHA to ferroptosis-related genes in and TCGA-UCEC cohort. (B) Connection of LDHA to FANCD2 and TFRC in TCGA-UCEC cohort. (C) Connection of LDHA to FANCD2 and TFRC in . (D) The differential expression of ferroptosis-related genes between high and low LDHA groups in the TCGA-UCEC cohort. (E) Hub genes of expression association and differential expression. (F, G) The Kaplan–Meier curve of hub genes. (H, I) The changes of ferroptosis-related genes after LDHA knockdown in EC cells. * P



Associations between LDHA expression and m6A-related genes in EC. (A) Connection of LDHA to m6A-related genes in and TCGA-UCEC cohort. (B) Connection of LDHA to ALKBH5 and HNRNPC in TCGA-UCEC cohort. (C) Connection of LDHA to ALKBH5 and HNRNPC in . (D) The differential expression of m6A-related genes between high and low LDHA groups in the TCGA-UCEC cohort. (E) Hub genes of expression association and differential expression. (F) The Kaplan–Meier curve of hub genes. * P

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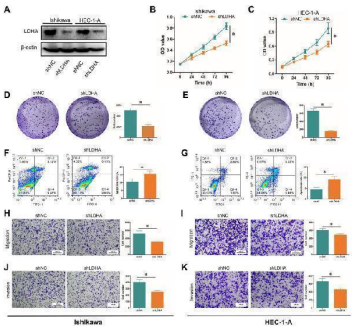
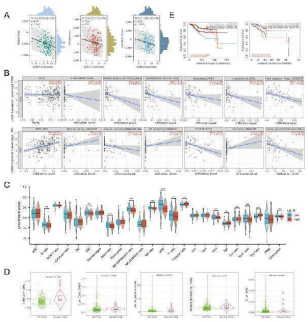
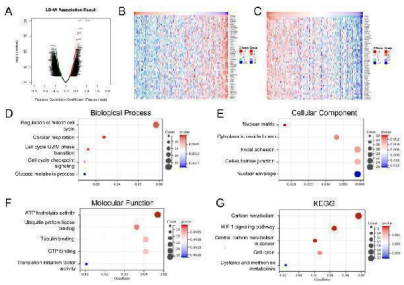


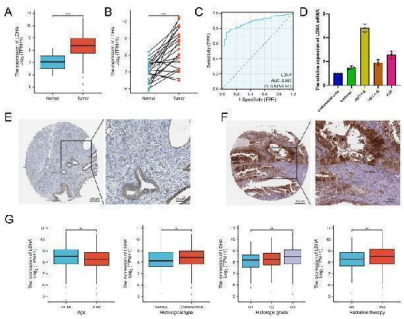
Influence of LDHA knockdown on EC functions. (A) LDHA protein level after LDHA knockdown detected by Western Blot. (B, C) Cell proliferation after LDHA knockdown detected by CCK-8 assay. (D, E) Cell proliferation after LDHA knockdown detected by cell clone formation assay. (F, G) . Cell apoptosis after LDHA knockdown detected by flow cytometry. (H, I) Cell migration after LDHA knockdown was detected by the Transwell assay. (J, K) Cell invasion after LDHA knockdown was detected by the Transwell assay. * P



Associations between LDHA and tumor immune infiltrating cells. (A) Correlation of LDHA to stromal cells and immune cells calculated by the ESTIMATE method. (B) Relationship between LDHA expression and infiltration levels of immune cells. (C) Enrichment scores of immune cells in the high LDHA group and low LDHA group. (D) Infiltration levels of immune cells in WT LDHA group and mutated LDHA group. (E) The survival curves of patients with different combinations of LDHA and immune cells. WT, wild type. * P



Enrichment analysis of LDHA-related genes in EC. (A) LDHA-related genes in TCGA-UCEC cohort detected by the LinkedOmics database. The top 50 co-expression genes positively (B) and negatively (C) associated with LDHA in the TCGA-UCEC cohort. (D–F) Enrichment analysis of (GO) terms for LDHA-related genes. (G) Enrichment analysis of KEGG terms for LDHA-related genes.Index in PubMed under a CC BY license. PMID: 39582531



The LDHA expression in endometrial cancer. (A) The LDHA expression summarized in the TCGA-UCEC cohort. (B) LDHA expression in paired tumor/normal EC tissues based on TCGA-UCEC cohort. (C) ROC curve analysis of LDHA. (D) The LDHA mRNA in endometrial cells detected by qRT-PCR. (E) LDHA protein stained in normal endometrial tissues by the HPA database. (F) LDHA protein stained in EC tissues by the HPA database. (G) The relationship between LDHA and clinicopathologic features. * P

2 Publications Citing This Product

1. PubMed ID: 10.7150/ijms.47360, Lipopolysaccharide Affects the Proliferation and Glucose Metabolism of Cervical Cancer Cells Through the FRA1/MDM2/p53 Pathway

2. PubMed ID: -, Jiang X,Yuan J,Dou Y,Zeng D, Xiao S.Lipopolysaccharide Affects the Proliferation and Glucose Metabolism of Cervical Cancer Cells Through the FRA1/MDM2/p53 Pathway.Int J Med Sci 2021;18(4): 1030-1038.doi:10. 7150/ijms.47360.

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