abcam

ab219591

Anti-Lactate Dehydrogenase antibody [EP1566Y] - BSA and Azide free

Anti-Lactate Dehydrogenase antibody [EP1566Y] - BSA and Azide free (ab219591) is a rabbit recombinant monoclonal antibody for **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- BSA, sodium azide, and glycerol-free for easy conjugation
- Biophysical QC for unrivalled batch-batch consistency

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EP1566Y
Purification technique	Affinity purification Protein A
Specificity	This antibody reacts with Lactate dehydrogenase; LDHA (79%), LDHB (100%) and LDHC (86%) based on the sequence homology with the immunogen.
Concentration	0.972 - 1.05 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Expected

Species	Mouse, Rat, Human
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information LDHB

Function	Interconverts simultaneously and stereospecifically pyruvate and lactate with concomitant interconversion of NADH and NAD(+).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

What is this antibody validated in?
Anti-Lactate Dehydrogenase antibody [EP1566Y] - BSA and Azide free (ab219591) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

What is the molecular weight of Lactate Dehydrogenase?
Anti-Lactate Dehydrogenase [EP1566Y] - BSA and Azide free (ab219591) specifically detects a band for Lactate Dehydrogenase (UniProt: P07195) at a molecular weight of 37kDa.

Other related products
We have a range of other formats of antibody clone [EP1566Y] also available for your convenience: ab52488, Alexa Fluor® 594 - ab214857, Carrier free - ab219591, APC - ab310866, PE - ab310930, Alexa Fluor® 568 - ab312960

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Lactate dehydrogenase (LDH) is an enzyme that catalyzes the interconversion of pyruvate and lactate along with the conversion of NADH to NAD+. LDH is known by other names such as lactic acid dehydrogenase and LDH-5. The enzyme has a molecular weight of approximately 36 kDa. LDH exists in almost all tissues having multiple isoforms that are expressed differently depending on the tissue type. It shows high expression in muscle tissue liver and heart indicating its extensive role in energy metabolism.
Biological function summary	Lactate dehydrogenase plays a critical role in anaerobic glycolysis. The enzyme helps in regenerating NAD+ from NADH allowing glycolysis to continue in the absence of oxygen. LDH is not a part of any larger protein complex working independently to fulfill its function in the glycolytic pathway. It serves in rapid energy production especially under hypoxic or exertional conditions where oxygen supply is limited.
Pathways	LDH is significantly involved in the glycolysis and gluconeogenesis pathways. Within glycolysis LDH helps facilitate the conversion of pyruvate to lactate during anaerobic conditions a step important for ATP production when oxygen is scarce. The enzyme is tied closely to phosphofructokinase-1 (PFK-1) in glycolysis given that both enzymes are central to maintaining the glycolytic flow. In gluconeogenesis though functionally reversed from its role in glycolysis LDH helps to manage lactate removal an important step for glucose synthesis from non-carbohydrate sources.
Associated diseases and disorders	Lactate dehydrogenase levels often act as a biomarker for tissue damage or certain cancers as its release into the bloodstream signals cellular injury or death. Elevated LDH levels are associated with conditions like myocardial infarction and certain forms of anemia. In cancer such as lymphoma or leukemia LDH correlates with the progression of the disease and acts as a prognostic marker. LDH's connection to these conditions often leads to insights into disease severity and progression due to its association with proteins like p53 and HIF-1 which play roles in cellular metabolism and hypoxia response.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

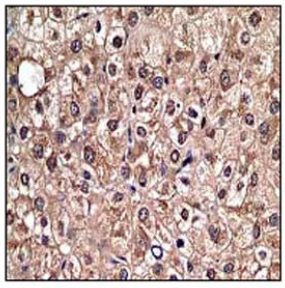
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

---

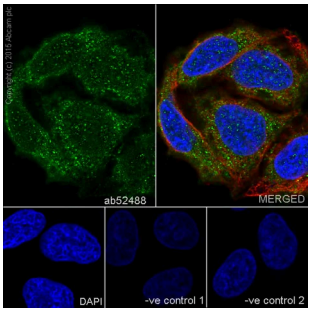
9 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Lactate Dehydrogenase antibody [EP1566Y] - BSA and Azide free (ab219591)

Lactate Dehydrogenase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Lactate Dehydrogenase antibody

Immunohistochemical analysis of paraffin-embedded human liver carcinoma using unpurified ab52488 at a 1/50 dilution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab52488).

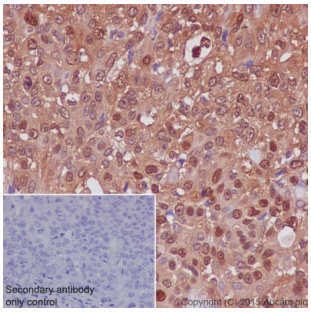


Immunocytochemistry/ Immunofluorescence - Anti-Lactate Dehydrogenase antibody [EP1566Y] - BSA and Azide free (ab219591)

Lactate Dehydrogenase Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Lactate Dehydrogenase antibody

ab52488 staining Lactate Dehydrogenase in HeLa (human cervix adenocarcinoma) cells by ICC/IF (Immunocytochemistry/immunofluorescence). Cells were fixed with 4% Paraformaldehyde and permeabilized with 0.1% Triton X-100. Samples were incubated with primary antibody at a dilution of 1/100. A goat anti rabbit IgG (Alexa Fluor® 488) (ab150077) was used as the secondary antibody at a dilution of 1/1000. ab7291 and ab150120 were used as counterstains for primary antibody ab52488 and secondary antibody ab150077 respectively and DAPI was used as a nuclear counterstain.
Negative control 1: Rabbit primary antibody and anti-mouse secondary antibody (ab150120)
Negative control 2: Mouse primary antibody (ab7291) and anti-rabbit secondary antibody (ab150077)

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab52488).

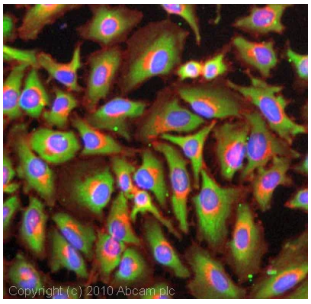


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Lactate Dehydrogenase antibody [EP1566Y] - BSA and Azide free (ab219591)

Lactate Dehydrogenase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Lactate Dehydrogenase antibody

ab52488 staining Lactate Dehydrogenase in human breast carcinoma tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with paraformaldehyde and antigen retrieval was by heat mediation in a EDTA buffer. Samples were incubated with primary antibody at a dilution of 1/2000. ab97051 was used as the secondary antibody.
Negative control 1: PBS in place of primary antibody.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab52488).

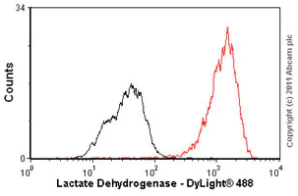


Immunocytochemistry/ Immunofluorescence - Anti-Lactate Dehydrogenase antibody [EP1566Y] - BSA and Azide free (ab219591)

Lactate Dehydrogenase Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Lactate Dehydrogenase antibody

ICC/IF image of unpurified ab52488 stained HeLa cells. The cells were 100% methanol fixed (5 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab52488, 1µg/ml) overnight at +4°C. The secondary antibody (green) was Alexa Fluor® 488 goat anti-rabbit IgG (H+L) used at a 1/1000 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.

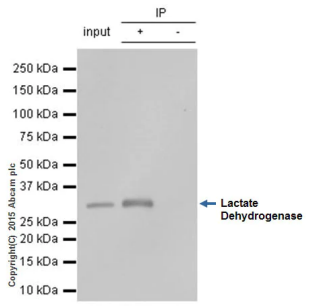
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab52488).



Flow Cytometry (Intracellular) - Anti-Lactate Dehydrogenase antibody [EP1566Y] - BSA and Azide free (ab219591)

Lactate Dehydrogenase Flow Cytometry (Intracellular) staining using rabbit Anti-Lactate Dehydrogenase antibody

Overlay histogram showing HeLa cells stained with unpurified ab52488 (red line). The cells were fixed with methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab52488, 1/50 dilution) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-rabbit IgG (H+L) (ab96899) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit monoclonal IgG (1µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a slightly decreased signal in HeLa cells fixed with 4% paraformaldehyde (10 min)/permeabilized in 0.1% PBS-Tween used under the same conditions.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab52488).



Immunoprecipitation - Anti-Lactate Dehydrogenase antibody [EP1566Y] - BSA and Azide free (ab219591)

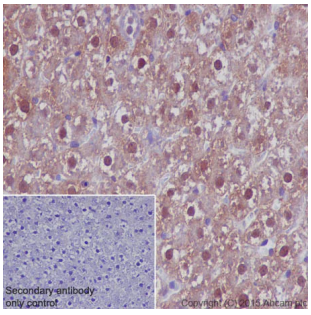
ab52488 immunoprecipitating Lactate Dehydrogenase. 10µg of cell lysate was incubated with primary antibody at a dilution of 1/30 and VeriBlot for IP Detection Reagent (HRP) (ab131366) at a dilution of 1/10000.
Lane 1: HeLa (human cervix adenocarcinoma) whole cell lysate (10ug)
Lane 2: HeLa (human cervix adenocarcinoma) whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab52488 in HeLa (human cervix adenocarcinoma) whole cell lysate

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab52488).

All lanes:
Immunoprecipitation - Anti-Lactate Dehydrogenase antibody [EP1566Y] (ab52488)

Predicted band size: 37 kDa

Observed band size: 36 kDa

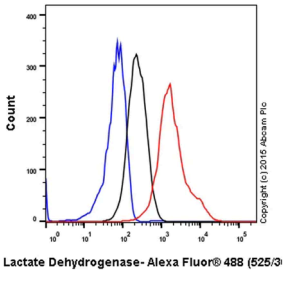


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Lactate Dehydrogenase antibody [EP1566Y] - BSA and Azide free (ab219591)

Lactate Dehydrogenase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Lactate Dehydrogenase antibody

ab52488 staining Lactate Dehydrogenase in mouse liver tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with paraformaldehyde and antigen retrieval was by heat mediation in a EDTA buffer. Samples were incubated with primary antibody at a dilution of 1/2000. A goat anti-rabbit IgG H&L (HRP) ab97051 was used as the secondary antibody at a dilution of 1/500.
Negative control 1: PBS in place of primary antibody.

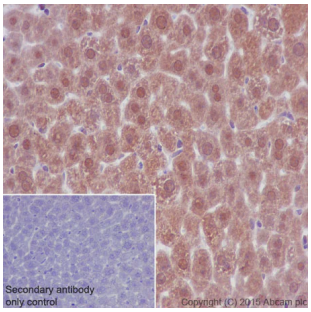
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab52488).



Flow Cytometry (Intracellular) - Anti-Lactate Dehydrogenase antibody [EP1566Y] - BSA and Azide free (ab219591)

Lactate Dehydrogenase Flow Cytometry (Intracellular) staining using rabbit Anti-Lactate Dehydrogenase antibody

Intracellular Flow Cytometry analysis of Raw264.7 (mouse abelson murine leukemia virus-induced tumor) whole cell lysate labelling Lactate Dehydrogenase with purified ab52488 at 1/190 (red). Cells were fixed with 4% paraformaldehyde. Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/500) was used as the secondary antibody. Black - Isotype control, rabbit monoclonal IgG. Blue - Unlabelled control, cells without incubation with primary and secondary antibodies.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab52488).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Lactate Dehydrogenase antibody [EP1566Y] - BSA and Azide free (ab219591)

Lactate Dehydrogenase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Lactate Dehydrogenase antibody

ab52488 staining Lactate Dehydrogenase in mouse liver tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with paraformaldehyde and antigen retrieval was by heat mediation in a EDTA buffer. Samples were incubated with primary antibody at a dilution of 1/2000. A goat anti-rabbit IgG H&L (HRP) ab97051 was used as the secondary antibody at a dilution of 1/500.
Negative control 1: PBS in place of primary antibody.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab52488).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.