abcam

ab300638

Anti-Lactate Dehydrogenase antibody [RM1039] (BSA and Azide free)

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Multiclonal
Immunogens	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	RM1039
Purification technique	Affinity purification Protein A
Concentration	1.042 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000

Notes	-

Species	Mouse
Dilution info	-
Notes	-

Species	Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

IHC-Fr

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human, Mouse
Dilution info	-
Notes	-

Expected

Species	Rat

Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt (Intra)

Tested

Species	Human, Mouse
Dilution info	-
Notes	-

Expected

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

IP

Tested

Species	Human, Mouse
Dilution info	-
Notes	-

Expected

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

Target data

See full target information LDHA

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

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.

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

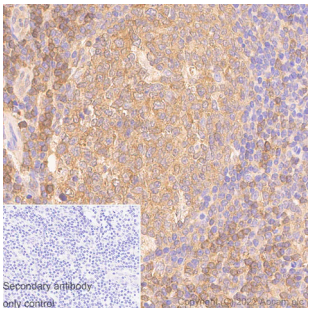
We do not recommend this combination. It is not covered by our product promise.

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.

12 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Lactate Dehydrogenase antibody [RM1039] (BSA and Azide free) (ab300638)

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

This data was developed using ab300637, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded human tonsil tissue labelling lactate dehydrogenase A, B, C with ab300637 at 1/5000 (0.094 µg/ml) followed by a ready to use LeicaDS9800 (BOND™ Polymer Refine Detection).

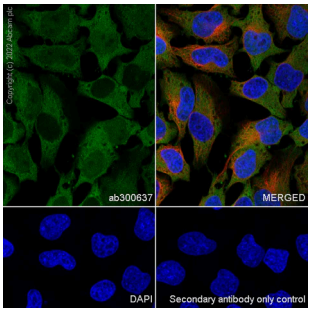
Positive staining on human tonsil is observed.

The section was incubated with ab300637 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Counterstained with Hematoxylin.

Secondary antibody only control: PBS was used instead of primary antibody followed by ready to use secondary antibody LeicaDS9800 (BOND™ Polymer Refine Detection kit).

Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins was used.



Immunocytochemistry/ Immunofluorescence - Anti-Lactate Dehydrogenase antibody [RM1039] (BSA and Azide free) (ab300638)

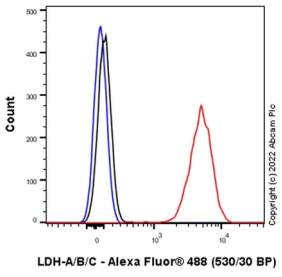
Lactate Dehydrogenase Immunocytochemistry/ Immunofluorescence staining of HeLa (human cervix adenocarcinoma epithelial cell) using rabbit Anti-Lactate Dehydrogenase antibody

This data was developed using ab300637, the same antibody clone in a different buffer formulation.
Immunofluorescent analysis of 4% paraformaldehyde fixed and 0.1% TritonX-100 permeabilized HeLa (human cervix adenocarcinoma epithelial cell) cells labeling lactate dehydrogenase A, B, C with ab300637 at 1/50 dilution (9.44µg/ml), followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488, Green) preadsorbed at 1:1000 (2µg/mL).

Confocal image showing cytoplasmic and weak nuclear staining in HeLa cell line.

ab195889 anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) (Red) was used as a counterstain at 1:200 dilution (2.5µg/ml).

Nuclear counter satin is DAPI.



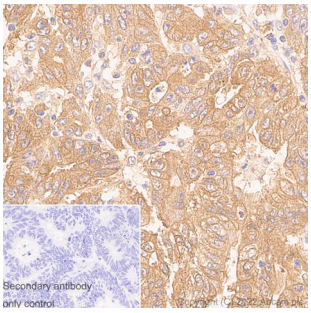
Flow Cytometry (Intracellular) - Anti-Lactate Dehydrogenase antibody [RM1039] (BSA and Azide free) (ab300638)

Lactate Dehydrogenase Flow Cytometry (Intracellular) staining of HeLa (human cervix adenocarcinoma epithelial cell) using rabbit Anti-Lactate Dehydrogenase antibody

This data was developed using ab300637, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of 4% paraformaldehyde fixed and 90% methanol permeabilized HeLa (human cervix adenocarcinoma epithelial cell) cells labelling

lactate dehydrogenase A, B, C with ab300637 at 1/500 dilution (0.1µg) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Lactate Dehydrogenase antibody [RM1039] (BSA and Azide free) (ab300638)

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

This data was developed using ab300637, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded human colon carcinoma tissue labelling Lactate Dehydrogenase A, B, C with ab300637 at 1/5000 (0.094 µg/ml) followed by a ready to use LeicaDS9800 (BOND™ Polymer Refine Detection).

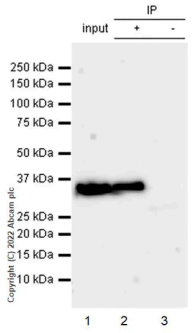
Positive staining on human colon carcinoma is observed.

The section was incubated with ab300637 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Counterstained with Hematoxylin.

Secondary antibody only control: PBS was used instead of primary antibody followed by ready to use secondary antibody LeicaDS9800 (BOND™ Polymer Refine Detection kit).

Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins was used.



Immunoprecipitation - Anti-Lactate Dehydrogenase antibody [RM1039] (BSA and Azide free) (ab300638)

This data was developed using ab300637, the same antibody clone in a different buffer formulation.
Lactate Dehydrogenase was immunoprecipitated from 0.35 mg HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate with ab300637 at 1/30 dilution (2 µg in 0.35 mg lysates). Western blot was performed on the immunoprecipitate using ab300637 at 1/5000 dilution.

VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

All lanes:
Immunoprecipitation - Anti-Lactate Dehydrogenase antibody [RM1039] (ab300637) at 1/5000 dilution

Lane 1:
HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate at 10 µg

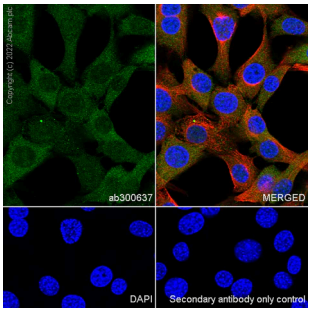
Lane 2:
ab300637 at 1/30 IP in HeLa whole cell lysate at 10 µg

Lane 3:
Rabbit monoclonal IgG (ab172730) instead of ab300637 in HeLa whole cell lysate at 10 µg

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 50s



Immunocytochemistry/ Immunofluorescence - Anti-Lactate Dehydrogenase antibody [RM1039] (BSA and Azide free) (ab300638)

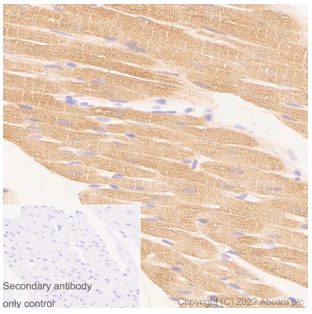
Lactate Dehydrogenase Immunocytochemistry/ Immunofluorescence staining of NIH/3T3 (mouse embryonic fibroblast) using rabbit Anti-Lactate Dehydrogenase antibody

This data was developed using ab300637, the same antibody clone in a different buffer formulation.
Immunofluorescent analysis of 4% paraformaldehyde fixed and 0.1% TritonX-100 permeabilized NIH/3T3 (mouse embryonic fibroblast) cells labeling lactate dehydrogenase A, B, C with ab300637 at 1/50 dilution (9.44µg/ml), followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488, Green) preadsorbed at 1:1000 (2µg/mL).

Confocal image showing cytoplasmic and weak nuclear staining in NIH/3T3 cell line.

ab195889 anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) (Red) was used as a counterstain at 1:200 dilution (2.5µg/ml).

Nuclear counter satin is DAPI.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Lactate Dehydrogenase antibody [RM1039] (BSA and Azide free) (ab300638)

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

This data was developed using ab300637, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded rat cardiac muscle tissue labelling Lactate Dehydrogenase A, B, C with ab300637 at 1/5000 (0.094 µg/ml) followed by a ready to use LeicaDS9800 (BOND™ Polymer Refine Detection).

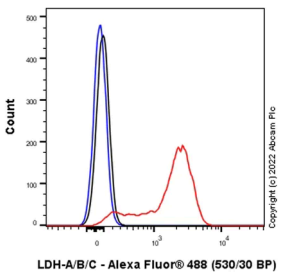
Positive staining on rat cardiac muscle is observed.

The section was incubated with ab300637 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Counterstained with Hematoxylin.

Secondary antibody only control: PBS was used instead of primary antibody followed by ready to use secondary antibody LeicaDS9800 (BOND™ Polymer Refine Detection kit).

Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins was used.

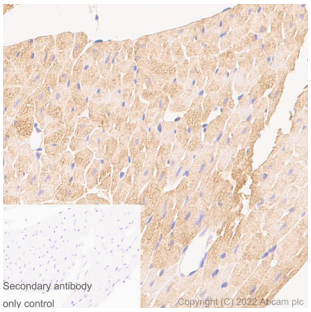


Flow Cytometry (Intracellular) - Anti-Lactate Dehydrogenase antibody [RM1039] (BSA and Azide free) (ab300638)

Lactate Dehydrogenase Flow Cytometry (Intracellular) staining of NIH/3T3 (mouse embryonic fibroblast) using rabbit Anti-Lactate Dehydrogenase antibody

This data was developed using ab300637, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of 4% paraformaldehyde fixed and 90% methanol permeabilized NIH/3T3 (mouse embryonic fibroblast) cells labelling lactate dehydrogenase A, B, C with ab300637 at 1/500 dilution (0.1µg) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Lactate Dehydrogenase antibody [RM1039] (BSA and Azide free) (ab300638)

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

This data was developed using ab300637, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded mouse cardiac muscle tissue labelling Lactate Dehydrogenase A, B, C with ab300637 at 1/5000 (0.094 µg/ml) followed by a ready to use LeicaDS9800 (BOND™ Polymer Refine Detection).

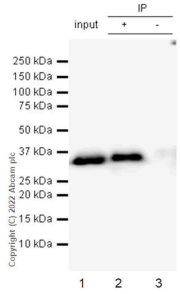
Positive staining on mouse cardiac muscle is observed.

The section was incubated with ab300637 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Counterstained with Hematoxylin.

Secondary antibody only control: PBS was used instead of primary antibody followed by ready to use secondary antibody LeicaDS9800 (BOND™ Polymer Refine Detection kit).

Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins was used.



Immunoprecipitation - Anti-Lactate Dehydrogenase antibody [RM1039] (BSA and Azide free) (ab300638)

This data was developed using ab300637, the same antibody clone in a different buffer formulation.
Lactate Dehydrogenase was immunoprecipitated from 0.35 mg NIH/3T3 (mouse embryonic fibroblast) whole cell lysate with ab300637 at 1/30 dilution (2 µg in 0.35 mg lysates). Western blot was performed on the immunoprecipitate using ab300637 at 1/1000 dilution.

VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.
All lanes:
Immunoprecipitation - Anti-Lactate Dehydrogenase antibody [RM1039] (ab300637) at 1/1000 dilution

Lane 1:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate at 10 µg

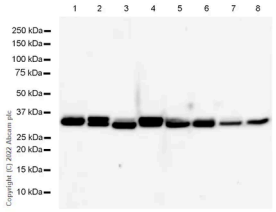
Lane 2:
ab300637 at 1/30 IP in NIH/3T3 whole cell lysate at 10 µg

Lane 3:
Rabbit monoclonal IgG (ab172730) instead of ab300637 in NIH/3T3 whole cell lysate at 10 µg

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 10s



Western blot - Anti-Lactate Dehydrogenase antibody [RM1039] (BSA and Azide free) (ab300638)

Lactate Dehydrogenase Western blot staining using rabbit Anti-Lactate Dehydrogenase antibody

This data was developed using ab300637, the same antibody clone in a different buffer formulation.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

All lanes:
Western blot - Anti-Lactate Dehydrogenase antibody [RM1039] (ab300637) at 1/1000 dilution

Lane 1:
Human heart lysate at 20 µg

Lane 2:
Mouse heart lysate at 20 µg

Lane 3:
Mouse skeletal muscle lysate at 20 µg

Lane 4:
Rat heart lysate at 20 µg

Lane 5:
Rat skeletal muscle lysate at 20 µg

Lane 6:
HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 7:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate at 20 µg

Lane 8:
C6 (rat glial tumor glial cell) whole cell lysate at 20 µg

Secondary

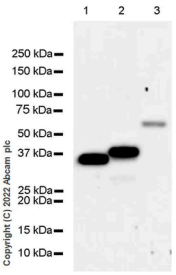
All lanes:

Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Predicted band size: 37 kDa

Observed band size: 35-37 kDa

Exposure time: 10s



Western blot - Anti-Lactate Dehydrogenase antibody [RM1039] (BSA and Azide free) (ab300638)

Lactate Dehydrogenase Western blot staining using rabbit Anti-Lactate Dehydrogenase antibody

This data was developed using ab300637, the same antibody clone in a different buffer formulation.
Blocking and diluting buffer and concentration: 5% NFDM/TBST.

All lanes:
Western blot - Anti-Lactate Dehydrogenase antibody [RM1039] (ab300637) at 1/1000 dilution

Lane 1:
LDH-A recombinant protein containing his-tag (2-332 aa) at 10 ng

Lane 2:
LDH-B recombinant protein containing his-tag (1-334 aa) at 10 ng

Lane 3:
LDH-C recombinant protein containing GST-tag (1-332 aa) at 10 ng

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 37 kDa, 62 kDa

Exposure time: 80s

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