abcam

ab314124

Anti-DOM3Z antibody [EPR27511-140]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR27511-140
Purification technique	Affinity purification Protein A
Specificity	Unsuitable for human IHC-P, mouse ICC and mouse FC-intra
Concentration	0.505 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Mouse
Dilution info	1/1000
Notes	

	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/1000
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Not recommended

Species	Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	-

Expected

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

Not recommended

Species	Mouse
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/50
Notes	-

Expected

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

Not recommended

Species	Mouse
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information DXO

Function

Decapping enzyme for NAD-capped RNAs: specifically hydrolyzes the nicotinamide adenine dinucleotide (NAD) cap from a subset of RNAs by removing the entire NAD moiety from the 5'-end of an NAD-capped RNA (PubMed:28283058). The NAD-cap is present at the 5'-end of some RNAs and snoRNAs (PubMed:28283058). In contrast to the canonical 5'-end N7 methylguanosine (m7G) cap, the NAD cap promotes mRNA decay (PubMed:28283058). Preferentially acts on NAD-capped transcripts in response to environmental stress (PubMed:31101919). Also acts as a non-canonical decapping enzyme that removes the entire cap structure of m7G capped or incompletely capped RNAs and mediates their subsequent degradation (By similarity). Specifically degrades pre-mRNAs with a defective 5'-end m7G cap and is part of a pre-mRNA capping quality control (By similarity). Has decapping activity toward incomplete 5'-end m7G cap mRNAs such as unmethylated 5'-end-capped RNA (cap0), while it has no activity toward 2'-O-ribose methylated m7G cap (cap1) (PubMed:29601584). In contrast to canonical decapping enzymes DCP2 and NUDT16, which cleave the cap within the triphosphate linkage, the decapping activity releases the entire cap structure GpppN and a 5'-end monophosphate RNA (By similarity). Also has 5'-3' exoribonuclease activities: The 5'-end monophosphate RNA is then degraded by the 5'-3' exoribonuclease activity, enabling this enzyme to decap and degrade incompletely capped mRNAs (PubMed:29601584). Also possesses RNA 5'-pyrophosphohydrolase activity by hydrolyzing the 5'-end triphosphate to release pyrophosphates (By similarity). Exhibits decapping activity towards FAD-capped RNAs (PubMed:32374864). Exhibits decapping activity towards dpCoA-capped RNAs in vitro (By similarity).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot

Storage information	Avoid freeze / thaw cycle

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.

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.

Supplementary info

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

Activity summary	DOM3Z also known as exosome component 1 or hDOM3Z is a protein involved in RNA processing and degradation. It has a molecular mass of about 28 kDa. This protein is present in various tissues with higher expression levels seen in the heart and skeletal muscle. DOM3Z localizes to the nucleus where it plays an important role in maintaining RNA quality control. The protein acts within the RNA exosome complex which is a multi-protein complex essential for RNA decay.
Biological function summary	DOM3Z forms part of the RNA exosome complex working in concert with other components to remove defective or unnecessary RNA molecules. This activity is essential for regulating RNA homeostasis and ensuring the fidelity of RNA populations within the cell. By interacting with exosome core components and exosome co-factors DOM3Z facilitates the degradation of a wide range of RNA substrates including messenger RNA and non-coding RNA. The proper function of DOM3Z within the exosome complex assures accuracy in gene expression regulation.
Pathways	The RNA degradation pathway heavily relies on functions executed by DOM3Z. It interacts with related proteins such as RRP6 and RRP44 within the exosome assembly. Another significant pathway involving DOM3Z is the non-coding RNA processing pathway where its involvement ensures the correct biogenesis and maturation of small nuclear RNAs and small nucleolar RNAs. This involvement of DOM3Z and its associated proteins highlights its central role in maintaining cellular RNA integrity and gene expression equilibrium.
Associated diseases and disorders	Abnormalities in DOM3Z function correlate with neuromuscular disorders reflecting its higher expression levels in muscle tissues. Mutations or misregulation that affect DOM3Z can also relate to certain types of cancer where disrupted RNA processing leads to uncontrolled cell proliferation. In the context of these conditions DOM3Z interacts with several proteins like DIS3L2 which play

roles in disease mechanisms. Understanding and investigating these associations may offer new avenues for therapeutic strategies targeting RNA metabolism disorders.

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

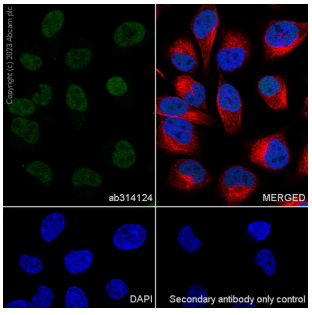
We do not recommend this combination. It is not covered by our product promise.

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.

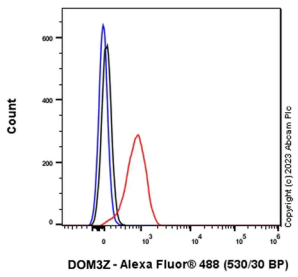
Full details and terms and conditions can be found here:
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7 product images



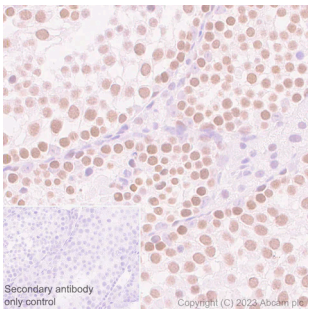
Immunocytochemistry/ Immunofluorescence - Anti-DOM3Z antibody [EPR27511-140] (ab314124)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HeLa (human cervical adenocarcinoma epithelial cell) cells labelling DOM3Z with ab314124 at 1/50 (10.1 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2 ug/ml dilution (Green). Confocal image showing mainly nuclear staining in HeLa cell line. Image was taken with a confocal microscope(Leica-Microsystems, TCS SP8). ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5ug/ml dilution (Red). The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/ml dilution.



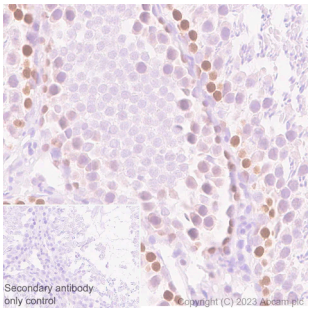
Flow Cytometry (Intracellular) - Anti-DOM3Z antibody [EPR27511-140] (ab314124)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HeLa (human cervical adenocarcinoma epithelial cell) cells labelling DOM3Z with ab314124 at 1/50 dilution (1 ug) (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). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.



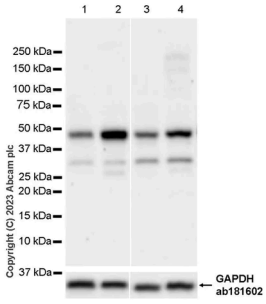
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-DOM3Z antibody [EPR27511-140] (ab314124)

Immunohistochemical analysis of paraffin-embedded mouse testis tissue labeling DOM3Z with ab314124 at 1/1000 (0.505 ug/ml) followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP polymer) (ab214880). Nuclear staining on mouse testis. The section was incubated with ab314124 at 4°C overnight. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP polymer) (ab214880). Heat mediated antigen retrieval was performed using ab93678 (citrate buffer, pH 6.0).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-DOM3Z antibody [EPR27511-140] (ab314124)

Immunohistochemical analysis of paraffin-embedded rat testis tissue labeling DOM3Z with ab314124 at 1/1000 (0.505 ug/ml) followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP polymer) (ab214880). Nuclear staining on rat testis. The section was incubated with ab314124 at 4°C overnight. Counterstained with Hematoxylin. Secondary antibody only control:Secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP polymer) (ab214880). Heat mediated antigen retrieval was performed using ab93678 (citrate buffer, pH 6.0).



Western blot - Anti-DOM3Z antibody [EPR27511-140] (ab314124)

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
This blot was developed using a high sensitivity ECL substrate. The high-sensitivity ECL substrate used allows for the detection of proteins in the mid-femtogram range.

The identity of the bands between 25 kDa and 37 kDa are unknown.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

All lanes:
Western blot - Anti-DOM3Z antibody [EPR27511-140] (ab314124) at 1/1000 dilution

Lane 1:
MOLT-4 (human lymphoblastic leukemia T lymphoblast) whole cell lysate at 20 µg

Lane 2:
MCF7 (human breast adenocarcinoma epithelial cell) whole cell lysate at 10 µg

Lane 3:
Neuro-2a (mouse neuroblastoma neuroblast) whole cell lysate at 20 µg

Lane 4:
Raji (human Burkitts lymphoma B lymphocyte) whole cell lysate at 20 µg

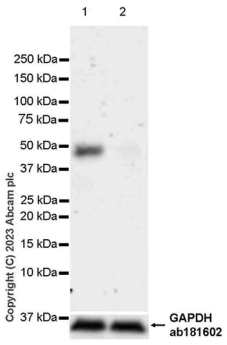
Secondary

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

Developed using the ECL technique.

Observed band size: 45 kDa

Exposure time: 81s



Western blot - Anti-DOM3Z antibody [EPR27511-140] (ab314124)

DOM3Z Western blot staining using rabbit Anti-DOM3Z antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution. Exposure time: 180 seconds
All lanes:
Western blot - Anti-DOM3Z antibody [EPR27511-140] (ab314124) at 1/1000 dilution

Lane 1:
HeLa (human cervix adenocarcinoma epithelial cell) transfected with scrambled siRNA control whole cell lysate at 20 µg

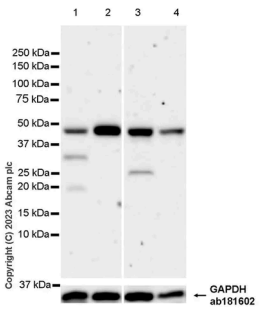
Lane 2:
HeLa transfected with siRNA specifically targeting DOM3Z whole cell lysate at 20 µg

Secondary

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

Observed band size: 45 kDa

Exposure time: 180s



Western blot - Anti-DOM3Z antibody [EPR27511-140] (ab314124)

Blocking and diluting buffer and concentration: 5% NFDM/TBST The identity of the bands between 20 kDa and 37 kDa are unknown. In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution. Exposure time: 180 seconds
All lanes:
Western blot - Anti-DOM3Z antibody [EPR27511-140] (ab314124) at 1/1000 dilution

Lane 1:
Mouse pancreas tissue lysate at 20 µg

Lane 2:
Mouse testis tissue lysate at 20 µg

Lane 3:
Rat testis tissue lysate at 20 µg

Lane 4:
Rat pancreas tissue lysate at 20 µg

Secondary

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

Observed band size: 45 kDa

Exposure time: 180s

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