abcam

ab288295

Anti-NOL3 antibody [EPR25182-11]

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	EPR25182-11
Purification technique	Affinity purification Protein A
Concentration	0.542 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Human

Dilution info	1/1000
Notes	-

Expected

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

IP

Tested

Species	Mouse
Dilution info	1/30
Notes	-

Species	Human
Dilution info	1/30
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000

Notes	-

Species	Human
Dilution info	1/1000
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/5000
Notes	-

Species	Rat
Dilution info	1/5000
Notes	-

Species	Human
Dilution info	1/5000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/5000
Notes	-

Expected

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

Target data

See full target information NOL3

Function	Isoform 1. May be involved in RNA splicing. Isoform 2. Functions as an apoptosis repressor that blocks multiple modes of cell death. Inhibits extrinsic apoptotic pathways through two different ways. Firstly by interacting with FAS and FADD upon FAS activation blocking death-inducing signaling complex (DISC) assembly (By similarity). Secondly by interacting with CASP8 in a mitochondria localization- and phosphorylation-dependent manner, limiting the amount of soluble CASP8 available for DISC-mediated activation (By similarity). Inhibits intrinsic apoptotic pathway in response to a wide range of stresses, through its interaction with BAX resulting in BAX inactivation, preventing mitochondrial dysfunction and release of pro-apoptotic factors (PubMed:15004034). Inhibits calcium-mediated cell death by functioning as a cytosolic calcium buffer, dissociating its interaction with CASP8 and maintaining calcium homeostasis (PubMed:15509781). Negatively regulates oxidative stress-induced apoptosis by phosphorylation-dependent suppression of the mitochondria-mediated intrinsic pathway, by blocking CASP2 activation and BAX translocation (By similarity). Negatively regulates hypoxia-induced apoptosis in part by inhibiting the release of cytochrome c from mitochondria in a caspase-independent manner (By similarity). Also inhibits TNF-induced necrosis by preventing TNF-signaling pathway through TNFRSF1A interaction abrogating the recruitment of RIPK1 to complex I (By similarity). Finally through its role as apoptosis repressor, promotes vascular remodeling through inhibition of apoptosis and stimulation of proliferation, in response to hypoxia (By similarity). Inhibits too myoblast differentiation through caspase inhibition (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	Nucleolar protein 3 (NOL3) also known as ARC (apoptosis repressor with caspase recruitment domain) is a multifunctional protein involved in apoptosis regulation and cellular stress responses. It has a molecular mass of approximately 26 kDa. NOL3 is expressed in various tissues but it displays high levels in the heart skeletal muscles and neurons. Its expression suggests a protective role in these tissues where it interacts with various cellular components to prevent apoptosis.
Biological function summary	NOL3 contributes significantly to cell survival and apoptosis inhibition by interacting with pro-apoptotic proteins to block their function. It acts as a safeguard against external stressors that can trigger cell death. As part of its role in apoptosis regulation NOL3 engages in complex formation with other proteins to modulate apoptotic pathways. For instance it binds directly to caspases preventing their activation and further propagation of cell death signals.
Pathways	NOL3 plays a critical role in the apoptosis and stress response pathways. It participates in the intrinsic apoptosis pathway by inhibiting the activation of key apoptotic enzymes while also interacting with proteins such as Bcl-2 and Bax to further regulate cell survival. The involvement of NOL3 in stress response pathways highlights its function in promoting cellular resilience in challenging conditions often functioning together with heat shock proteins that assist in protein folding and stress recovery.
Associated diseases and disorders	NOL3 has been implicated in neurodegenerative diseases and cardiac dysfunction. In particular its dysregulation is associated with conditions like Alzheimer's disease where it might influence neural cell survival. Furthermore NOL3 interacts with amyloid precursor protein (APP) which has a role in Alzheimer's pathology. In the context of cardiac diseases altered NOL3 expression may influence cardiac hypertrophy and heart failure potentially interacting with proteins such as caspase-8 in these processes.

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.

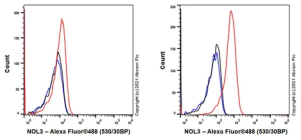
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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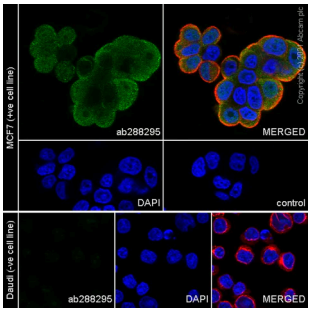
12 product images



Flow Cytometry (Intracellular) - Anti-NOL3 antibody [EPR25182-11] (ab288295)

NOL3 Flow Cytometry (Intracellular) staining using rabbit Anti-NOL3 antibody

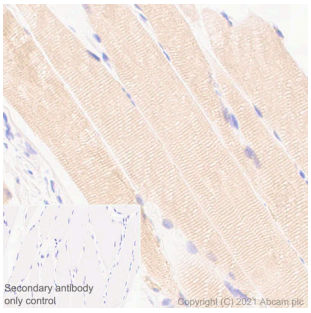
Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized Daudi (Human Burkitt's lymphoma lymphoblast, Left) / MCF7 (Human breast adenocarcinoma epithelial cell, Right) cells labelling NOL3 with ab288295 at 1/5000 dilution (0.01ug)(Red) compared with a Rabbit monoclonal IgG (ab172730) (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 1/2000 dilution was used as the secondary antibody.
Negative control: Daudi (PMID: HPA database).



Immunocytochemistry/ Immunofluorescence - Anti-NOL3 antibody [EPR25182-11] (ab288295)

NOL3 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-NOL3 antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized MCF7 cells labelling NOL3 with ab288295 at 1/1000 dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (Green). Confocal image showing nuclear and cytoplasmic staining in MCF7 cell line. **Negative control:** Daudi. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 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 dilution.

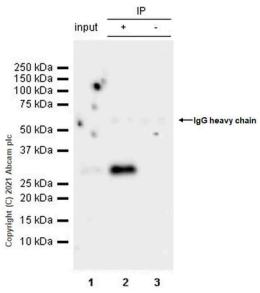


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NOL3 antibody [EPR25182-11] (ab288295)

NOL3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-NOL3 antibody

Immunohistochemical analysis of paraffin-embedded Human skeletal muscle tissue labelling NOL3 with ab288295 at 1/5000 (0.108 ug/ml) followed by a ready to use LeicaDS9800 (Bond™, Polymer Refine Detection). Cytoplasmic staining on human skeletal muscle. The section was incubated with ab288295 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™, Polymer Refine Detection).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



Immunoprecipitation - Anti-NOL3 antibody [EPR25182-11] (ab288295)

NOL3 was immunoprecipitated from 0.35 mg MCF7 (human breast adenocarcinoma epithelial cell) whole cell lysate with ab288295 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab288295 at 1/1000 dilution. VeriBlot for IP secondary antibody (HRP) (ab131366) was used at 1/5000 dilution.
Lane 1: MCF7 (human breast adenocarcinoma epithelial cell) whole cell lysate 10 ug

Lane 2: ab288295 IP in MCF7 whole cell lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab288295 in MCF7 whole cell lysate

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

Exposure time: 32 seconds

All lanes:
Immunoprecipitation - Anti-NOL3 antibody [EPR25182-11] (ab288295) at 1/1000 dilution

Secondary

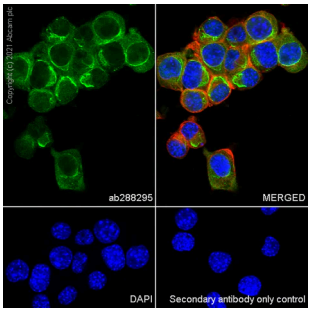
All lanes:

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

Predicted band size: 24 kDa

Observed band size: 27 kDa

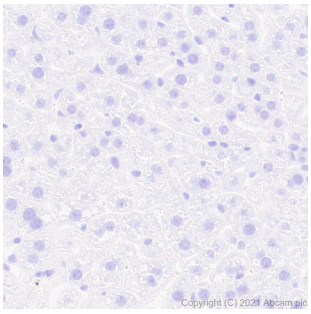
Exposure time: 32s



Immunocytochemistry/ Immunofluorescence - Anti-NOL3 antibody [EPR25182-11] (ab288295)

NOL3 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-NOL3 antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized Neuro-2a cells labelling NOL3 with ab288295 at 1/1000 dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (Green). Confocal image showing nuclear and cytoplasmic staining in Neuro-2a cell line. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 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 dilution.

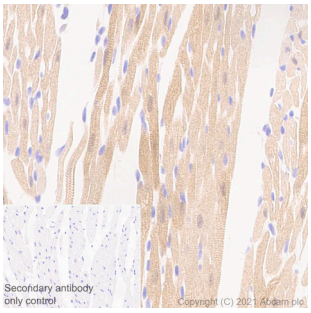


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NOL3 antibody [EPR25182-11] (ab288295)

NOL3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-NOL3 antibody

Immunohistochemical analysis of paraffin-embedded Mouse liver tissue labelling NOL3 with ab288295 at 1/5000 (0.108 ug/ml) followed by a ready to use LeicaDS9800 (Bond®, Polymer Refine Detection) was used. **Negative control:** No staining on mouse liver. The section was incubated with ab288295 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond®, Polymer Refine Detection) was used.

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins

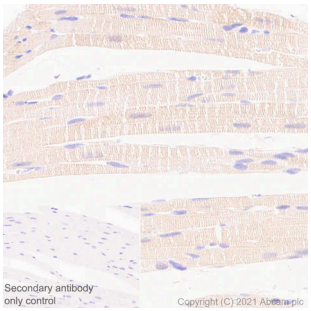


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NOL3 antibody [EPR25182-11] (ab288295)

NOL3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-NOL3 antibody

Immunohistochemical analysis of paraffin-embedded Mouse cardiac muscle tissue labelling NOL3 with ab288295 at 1/5000 (0.108 ug/ml) followed by a ready to use LeicaDS9800 (Bond®, Polymer Refine Detection). Positive staining on mouse cardiac muscle. The section was incubated with ab288295 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond®, Polymer Refine Detection).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins

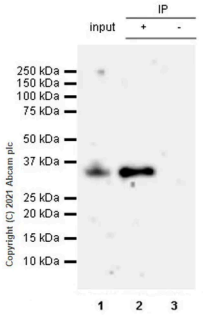


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NOL3 antibody [EPR25182-11] (ab288295)

NOL3 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-NOL3 antibody

Immunohistochemical analysis of paraffin-embedded Rat cardiac muscle tissue labelling NOL3 with ab288295 at 1/5000 (0.108 ug/ml) followed by a ready to use LeicaDS9800 (Bond®, Polymer Refine Detection). Positive staining on rat cardiac muscle. The section was incubated with ab288295 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.
Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond®, Polymer Refine Detection).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



Immunoprecipitation - Anti-NOL3 antibody [EPR25182-11] (ab288295)

NOL3 was immunoprecipitated from 0.35 mg Neuro-2a (mouse neuroblastoma neuroblast) whole cell lysate with ab288295 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab288295 at 1/1000 dilution. VeriBlot for IP secondary antibody (HRP) (ab131366) was used at 1/5000 dilution.
Lane 1: Neuro-2a (mouse neuroblastoma neuroblast) whole cell lysate 10 ug

Lane 2: ab288295 IP in Neuro-2a whole cell lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab288295 in Neuro-2a whole cell lysate

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

Exposure time: 3 minutes

All lanes:
Immunoprecipitation - Anti-NOL3 antibody [EPR25182-11] (ab288295) at 1/1000 dilution

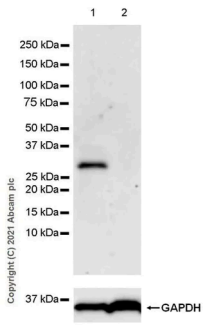
Secondary

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

Predicted band size: 24 kDa

Observed band size: 27 kDa

Exposure time: 3min



Western blot - Anti-NOL3 antibody [EPR25182-11] (ab288295)

NOL3 Western blot staining using rabbit Anti-NOL3 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
The observed MW/expression profile is consistent with what has been described in the literature (PMID: 17142452).

Negative control: Daudi (PMID: HPA database)

Exposure time: 3 minutes

All lanes:
Western blot - Anti-NOL3 antibody [EPR25182-11] (ab288295) at 1/1000 dilution

Lane 1:
MCF7 (human breast adenocarcinoma epithelial cell) whole cell lysate at 20 µg

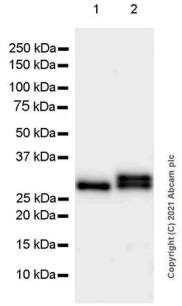
Lane 2:
Daudi (human Burkitts lymphoma lymphoblast) whole cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/20000 dilution

Predicted band size: 24 kDa

Observed band size: 27 kDa



Western blot - Anti-NOL3 antibody [EPR25182-11] (ab288295)

NOL3 Western blot staining using rabbit Anti-NOL3 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
The observed MW/expression profile is consistent with what has been described in the literature (PMID: 15848180).

Exposure time: 15 seconds

All lanes:
Western blot - Anti-NOL3 antibody [EPR25182-11] (ab288295) at 1/1000 dilution

Lane 1:
Human heart tissue lysate at 20 µg

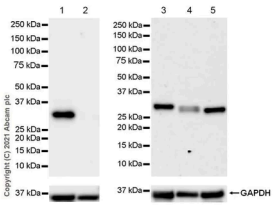
Lane 2:
Human skeletal muscle tissue lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Predicted band size: 24 kDa

Observed band size: 27 kDa



Western blot - Anti-NOL3 antibody [EPR25182-11] (ab288295)

NOL3 Western blot staining using rabbit Anti-NOL3 antibody

Blocking and diluting buffer: 5% NFDM/TBST.
The observed MW/expression profile is consistent with what has been described in the literature (PMID: 14645204, 20026055, 10590251).

Low expression: Mouse liver (PMID: 14645204)

Exposure time: 3 minutes

All lanes:
Western blot - Anti-NOL3 antibody [EPR25182-11] (ab288295) at 1/1000 dilution

Lane 1:
Mouse heart tissue lysate at 20 µg

Lane 2:
Mouse liver tissue lysate at 20 µg

Lane 3:
Mouse skeletal muscle tissue lysate at 20 µg

Lane 4:
Rat heart tissue lysate at 20 µg

Lane 5:
Rat skeletal muscle tissue lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/100000 dilution

Predicted band size: 24 kDa

Observed band size: 27 kDa

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