abcam

ab184247

Anti-DRP1 antibody [EPR19274]

Anti-DRP1 antibody [EPR19274] (ab184247) is a rabbit monoclonal antibody detecting DRP1 in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 170 publications

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 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	EPR19274
Purification technique	Affinity purification Protein A
Concentration	0.427 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Expected

Species	Mouse, 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	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/250
Notes	-

Species	Human
Dilution info	1/250

Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/70
Notes	-

Expected

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

IHC-P

Tested

Species	Mouse
Dilution info	1/1000
Notes	IHC is recommended for rat and mouse only. Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/1000
Notes	IHC is recommended for rat and mouse only. Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Expected

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

Target data

See full target information DNM1L

Function

Functions in mitochondrial and peroxisomal division (PubMed:11514614, PubMed:12499366, PubMed:17301055, PubMed:17460227, PubMed:17553808, PubMed:18695047, PubMed:18838687, PubMed:19342591, PubMed:19411255, PubMed:19638400, PubMed:23283981, PubMed:23530241, PubMed:23921378, PubMed:26992161, PubMed:27145208, PubMed:27145933, PubMed:27301544, PubMed:27328748, PubMed:29478834, PubMed:32439975, PubMed:32484300, PubMed:9570752, PubMed:9786947). Mediates membrane fission through oligomerization into membrane-associated tubular structures that wrap around the scission site to constrict and sever the mitochondrial membrane through a GTP hydrolysis-dependent mechanism (PubMed:23530241, PubMed:23584531, PubMed:33850055). The specific recruitment at scission sites is mediated by membrane receptors like MFF, MIEF1 and MIEF2 for mitochondrial membranes (PubMed:23283981, PubMed:23921378, PubMed:29899447). While the recruitment by the membrane receptors is GTP-dependent, the following hydrolysis of GTP induces the dissociation from the receptors and allows DNM1L filaments to curl into closed rings that are probably sufficient to sever a double membrane (PubMed:29899447). Acts downstream of PINK1 to promote mitochondrial fission in a PRKN-dependent manner (PubMed:32484300). Plays an important role in mitochondrial fission during mitosis (PubMed:19411255, PubMed:26992161, PubMed:27301544, PubMed:27328748). Through its function in mitochondrial division, ensures the survival of at least some types of postmitotic neurons, including Purkinje cells, by suppressing oxidative damage (By similarity). Required for normal brain development, including that of cerebellum (PubMed:17460227, PubMed:26992161, PubMed:27145208, PubMed:27301544, PubMed:27328748). Facilitates developmentally regulated apoptosis during neural tube formation (By similarity). Required for a normal rate of cytochrome c release and caspase activation during apoptosis; this requirement may depend upon the cell type and the physiological apoptotic cues (By similarity). Required for formation of endocytic vesicles (PubMed:20688057, PubMed:23792689, PubMed:9570752). Proposed to regulate synaptic vesicle membrane dynamics through association with BCL2L1 isoform Bcl-X(L) which stimulates its GTPase activity in synaptic vesicles; the function may require its recruitment by MFF to clathrin-containing vesicles (PubMed:17015472, PubMed:23792689). Required for programmed necrosis execution (PubMed:22265414). Rhythmic control of its activity following phosphorylation at Ser-637 is essential for the circadian control of mitochondrial ATP production (PubMed:29478834). Isoform 1. Inhibits peroxisomal division when overexpressed. Isoform 4. Inhibits peroxisomal division when overexpressed.

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

Product Specifications
Anti-DRP1 antibody [EPR19274] (ab184247) was developed by Abcam using patented rabbit monoclonal antibody technology and is validated for use in Flow Cyt (Intra), ICC/IF, IHC-P, IP, WB in human, mouse, rat samples.
Anti-DRP1 antibody [EPR19274] (ab184247) specifically detects DRP1 (UniProt ID: Q8K1M6; Molecular weight: 82kDa) and is sold in a convenient trial size to enable initial testing (20 µL) and larger sizes for subsequent scaling up experiments (100 µL and 1 mL).

Quality and Validation
Abcam's high quality manufacturing and validation processes ensure Anti-DRP1 antibody [EPR19274] (ab184247) has high sensitivity and specificity alongside high lot-to-lot consistency and reproducibility.
Anti-DRP1 antibody [EPR19274] (ab184247) has been cited over 171 times in peer reviewed journals and is trusted by the scientific community.
Anti-DRP1 antibody [EPR19274] (ab184247) has 4 independent reviews from customers.

Related Products
Antibody clone EPR19274 is also available pre-conjugated to a variety of labels for your convenience - PE, APC (ab216737, ab221289).
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.

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.

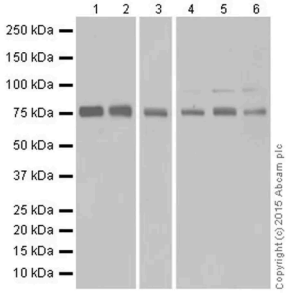
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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15 product images



Western blot - Anti-DRP1 antibody [EPR19274] (ab184247)

DRP1 Western blot staining using rabbit Anti-DRP1 antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
Exposure time: Lane 1 and 2: 3 minutes; Lane 3: 30 seconds; Lane 4,5 and 6: 8 seconds.

DRP1 can be SUMOylated, as described in the literature (PMID: 19638400).

All lanes:
Western blot - Anti-DRP1 antibody [EPR19274] (ab184247) at 1/1000 dilution

Lane 1:
A549 (Human lung carcinoma cell line) whole cell lysate at 10 µg

Lane 2:
U-2 OS (Human bone osteosarcoma epithelial cell line) whole cell lysate at 10 µg

Lane 3:
HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate at 10 µg

Lane 4:
Jurkat (Human T cell leukemia cell line from peripheral blood) whole cell lysate at 10 µg

Lane 5:
HEK-293 (Human epithelial cell line from embryonic kidney) whole cell lysate at 10 µg

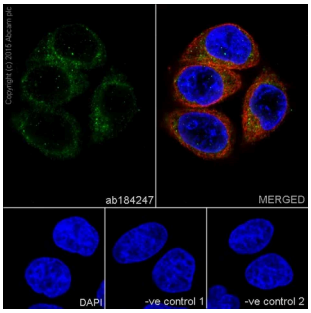
Lane 6:
HCT 116 (Human colorectal carcinoma cell line) whole cell lysate at 10 µg

Secondary

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

Predicted band size: 82 kDa

Observed band size: 83 kDa



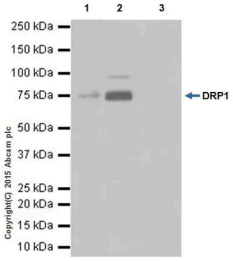
Immunocytochemistry/ Immunofluorescence - Anti-DRP1 antibody [EPR19274] (ab184247)

DRP1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-DRP1 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (Human epithelial cell line from cervix adenocarcinoma) cells labeling DRP1 with ab184247 at 1/250 dilution, followed by Goat anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasm staining on HeLa cell line. The nuclear counter stain is DAPI (blue).
Tubulin is detected with Anti-alpha Tubulin antibody [EPR19274] - Loading Control (ab7291) at 1/1000 dilution and Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) preadsorbed (ab150120) at 1/1000 dilution (red).

The negative controls are as follows:
-ve control 1: ab184247 at 1/250 dilution followed by ab150120 at 1/1000 dilution.
-ve control 2: ab7291 at 1/1000 dilution followed by ab150077 at 1/1000 dilution.

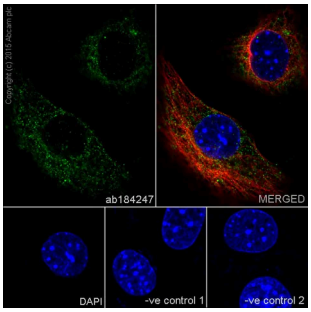
Immunoprecipitation - Anti-DRP1 antibody [EPR19274] (ab184247)



DRP1 was immunoprecipitated from 1mg of HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate with ab184247 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab184247 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10000 dilution.
Lane 1: HeLa whole cell lysate 10µg (Input).
Lane 2: ab184247 IP in HeLa whole cell lysate.
Lane 3: Rabbit IgG,monoclonal [EPR19274]-Isotype Control (ab172730) instead of ab184247 in HeLa whole cell lysate.
Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 5 seconds.
Note: DRP1 can be SUMOylated, as described in the literature (PMID: 19638400).

All lanes:
Immunoprecipitation - Anti-DRP1 antibody [EPR19274] (ab184247)

Predicted band size: 82 kDa

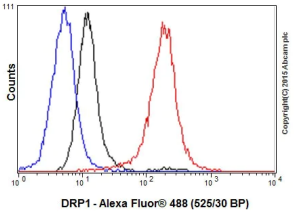


Immunocytochemistry/ Immunofluorescence - Anti-DRP1 antibody [EPR19274] (ab184247)

DRP1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-DRP1 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized NIH/3T3 (Mouse embryonic fibroblast cell line) cells labeling DRP1 with ab184247 at 1/250 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasm staining on NIH/3T3 cell line. The nuclear counter stain is DAPI (blue).
Tubulin is detected with Anti-alpha Tubulin antibody [EPR19274] - Loading Control (ab7291) at 1/1000 dilution and Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) preadsorbed (ab150120) at 1/1000 dilution (red).

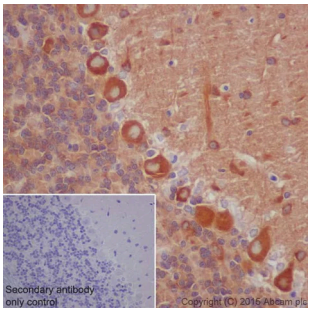
The negative controls are as follows:
-ve control 1: ab184247 at 1/250 dilution followed by ab150120 at 1/1000 dilution.
-ve control 2: ab7291 at 1/1000 dilution followed by ab150077 at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-DRP1 antibody [EPR19274] (ab184247)

DRP1 Flow Cytometry (Intracellular) staining using rabbit Anti-DRP1 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed NIH/3T3 (Mouse embryonic fibroblast cell line) cells labeling DRP1 with ab184247 at 1/70 dilution (red) compared with a Rabbit IgG,monoclonal -Isotype Control (ab172730; black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody; blue). Goat anti rabbit IgG (FITC) at 1/500 dilution was used as the secondary antibody.

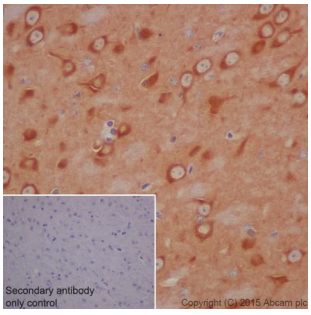


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-DRP1 antibody [EPR19274] (ab184247)

DRP1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-DRP1 antibody

Immunohistochemical analysis of paraffin-embedded Rat cerebellum tissue labeling DRP1 with ab184247 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Cytoplasm staining on rat cerebellum is observed. Counter stained with Hematoxylin. Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



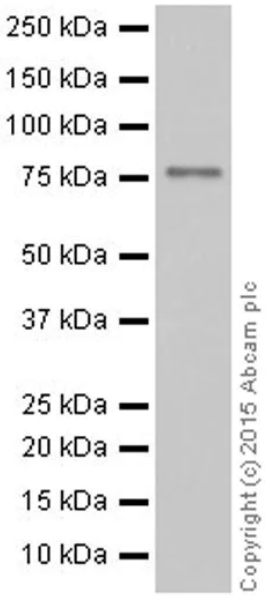
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-DRP1 antibody [EPR19274] (ab184247)

DRP1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-DRP1 antibody

Immunohistochemical analysis of paraffin-embedded Mouse cerebrum tissue labeling DRP1 with ab184247 at 1/1000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500

dilution. Cytoplasm staining on mouse cerebrum is observed. Counter stained with Hematoxylin. Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Western blot - Anti-DRP1 antibody [EPR19274] (ab184247)

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-DRP1 antibody [EPR19274] (ab184247) at 1/1000 dilution

All lanes:
Human fetal kidney lysate at 10 µg

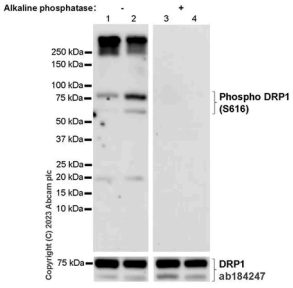
Secondary

All lanes:
Goat Anti-Rabbit IgG Peroxidase Conjugate, specific to the non-reduced form of IgG at 1/100000 dilution

Predicted band size: 53 kDa, 56 kDa, 82 kDa

Observed band size: 53 kDa, 56 kDa, 83 kDa

Exposure time: 30s



Western blot - Anti-DRP1 antibody [EPR19274] (ab184247)

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

The identity of the lower MW band at approximately 20 kDa is unknown.

The expression profile/ molecular weight observed is consistent with what has been described in the literature (PMID: 19436752).

ab184247 was used as the loading control at a 1/1000 dilution.

All lanes:
Western blot - Anti-DRP1 (phospho S616) antibody [EPR27387-57] (ab314755) at 1/1000 dilution

Lane 1:
Untreated HAP1 (human chronic myelogenous leukemia near-haploid cell line) whole cell lysate (untreated membrane) at 20 µg

Lane 2:
HAP1 treated with 100 ng/ml nocodazole for 16 hours whole cell lysate (untreated membrane) at 20 µg

Lane 3:
Untreated HAP1 (human chronic myelogenous leukemia near-haploid cell line) whole cell lysate (phosphatase treated membrane) at 20 µg

Lane 4:
HAP1 treated with 100 ng/ml nocodazole for 16 hours whole cell lysate (phosphatase treated membrane) at 20 µg

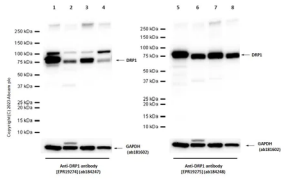
Secondary

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

Predicted band size: 82 kDa

Observed band size: 83 kDa

Exposure time: 92s



Western blot - Anti-DRP1 antibody [EPR19274] (ab184247)

Blocking and diluting buffer: 5% NFDM/TBST.

ab181602 was used as a loading control at 1/1000000 dilution.

ab184248 worked better in western blot application.

Lanes 1 - 4:
Western blot - Anti-DRP1 antibody [EPR19274] (ab184247) at 1/1000 dilution

Lanes 5 - 8:
Western blot - Anti-DRP1 antibody [EPR19275] (ab184248) at 1/1000 dilution

Lanes 1 and 5:
Mouse brain tissue lysate at 20 µg

Lanes 2 and 6:
Mouse liver tissue lysate at 20 µg

Lanes 3 and 7:
Mouse heart tissue lysate at 20 µg

Lanes 4 and 8:
Mouse lung tissue lysate at 20 µg

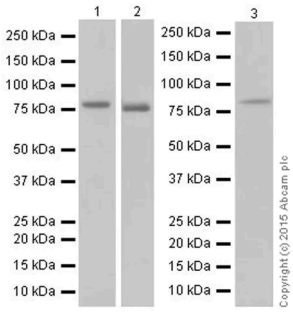
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 82 kDa

Observed band size: 80 kDa

Exposure time: 7s



Western blot - Anti-DRP1 antibody [EPR19274] (ab184247)

Blocking/Dilution buffer: 5% NFDM/TBST.
Lane 1: 2 seconds; Lane 2: 8 seconds; Lane 3: 3 seconds.

All lanes:
Western blot - Anti-DRP1 antibody [EPR19274] (ab184247) at 1/1000 dilution

Lane 1:
Rat brain lysate at 10 µg

Lane 2:

Rat heart lysate at 10 µg

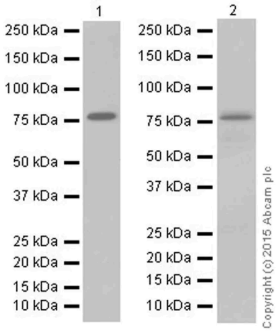
Lane 3:
Mouse brain lysate at 10 µg

Secondary

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

Predicted band size: 82 kDa

Observed band size: 83 kDa



Western blot - Anti-DRP1 antibody [EPR19274] (ab184247)

DRP1 Western blot staining using rabbit Anti-DRP1 antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-DRP1 antibody [EPR19274] (ab184247) at 1/1000 dilution

Lane 1:
PC-12 (Rat adrenal gland pheochromocytoma cell line) whole cell lysate at 10 µg

Lane 2:
NIH/3T3 (Mouse embryonic fibroblast cell line) whole cell lysate at 10 µg

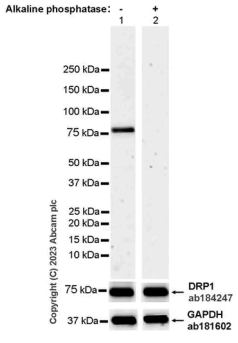
Secondary

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

Predicted band size: 141 kDa, 42 kDa, 82 kDa, 86 kDa, 94 kDa

Observed band size: 83 kDa, 86 kDa

Exposure time: 3min



Western blot - Anti-DRP1 antibody [EPR19274] (ab184247)

Blocking and diluting buffer and concentration: 5% NFDM/TBST. In western blot, anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution. In western blot, anti-DRP1 antibody [EPR19274] - Total protein Control (ab184247) staining at 1/1000 dilution.
All lanes:
Western blot - Anti-DRP1 (phospho S616) antibody [EPR27387-57] (ab314755) at 1/1000 dilution

Lane 1:
PC-12 (rat adrenal gland pheochromocytoma cell) whole cell lysate (untreated membrane) at 20 µg

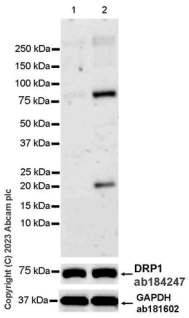
Lane 2:
PC-12 whole cell lysate (phosphatase treated membrane) at 20 µg

Secondary

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

Observed band size: 83 kDa

Exposure time: 180s



Western blot - Anti-DRP1 antibody [EPR19274] (ab184247)

Blocking and diluting buffer and concentration: 5% NFDM/TBST. The identity of the lower MW band at approximately 20 kDa (in lane 2) is unknown. In western blot, anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution. In western blot, anti-DRP1 antibody [EPR19274] - Total protein Control (ab184247) staining at 1/1000 dilution.
All lanes:
Western blot - Anti-DRP1 (phospho S616) antibody [EPR27387-57] (ab314755) at 1/1000 dilution

Lane 1:
Untreated NIH/3T3 (mouse embryonic fibroblast) whole cell lysate at 20 µg

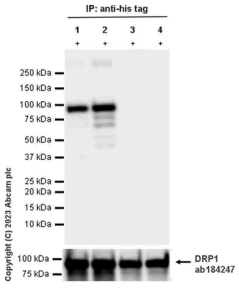
Lane 2:
NIH/3T3 treated with /ml nocodazole for 17 hours whole cell lysate at 20 µg

Secondary

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

Observed band size: 83 kDa

Exposure time: 180s



Western blot - Anti-DRP1 antibody [EPR19274] (ab184247)

Blocking and diluting buffer and concentration: 5% NFDM/TBST. Immunoprecipitation experiments were performed with an anti-6X His tag® antibody (ab213204) at 1:5000 dilution. In western blot, anti-DRP1 antibody [EPR19274] - Total protein Control (ab184247) staining at 1/1000 dilution.
All lanes:
Western blot - Anti-DRP1 (phospho S616) antibody [EPR27387-57] (ab314755) at 1/1000 dilution

Lane 1:
Untreated 293T cells transfected with a human DRP1 expression vector containi a myc-His-tag® lysate at 20 µg

Lane 2:
293T cells transfected with a human DRP1 expression vector containing a myc-His-tag®. Overexpressi cells were treated with 100/ml nocodazole for 17 hours whole cell lysate at 20 µg

Lane 3:
Untreated 293T cells transfected with a human DRP1(S616A mutant) expression vector containi a myc-His-tag® lysate at 20 µg

Lane 4:
293T cells transfected with a human DRP1(S616A mutant) expression vector containing a myc-His-tag®. Overexpressi cells were treated with 100/ml nocodazole for 17 hours whole cell lysate at 20 µg

Secondary

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

Observed band size: 83 kDa

Exposure time: 3s

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