

Product datasheet

Anti-DRP1 antibody [3B5] ab56788

★★★★★ [21 Abreviews](#) [182 References](#) [3 Images](#)

Overview

Product name	Anti-DRP1 antibody [3B5]
Description	Mouse monoclonal [3B5] to DRP1
Host species	Mouse
Tested applications	Suitable for: IHC-P, IP, Flow Cyt
Species reactivity	Reacts with: Human
Immunogen	Recombinant full length protein corresponding to Human DRP1 aa 1-710.
General notes	<p>This product was changed from ascites to tissue culture supernatant on 15 May 2019. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team.</p> <p>The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.</p> <p>If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As</p>

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Upon delivery aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw cycles.
Storage buffer	pH: 7.40 Constituent: PBS
Purity	Tissue culture supernatant
Purification notes	Purified from TCS.
Clonality	Monoclonal
Clone number	3B5
Isotype	IgG2b
Light chain type	kappa

Applications

The Abpromise guarantee

Our **Abpromise guarantee** covers the use of ab56788 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IHC-P	★★★★★ (3)	Use at an assay dependent concentration.
IP	★★★★★ (2)	Use at an assay dependent concentration.
Flow Cyt		Use at an assay dependent concentration. ab170192 - Mouse monoclonal IgG2b, is suitable for use as an isotype control with this antibody.

Target

Function

Functions in mitochondrial and peroxisomal division. Mediates membrane fission through oligomerization into ring-like structures which wrap around the scission site to constrict and sever the mitochondrial membrane through a GTP hydrolysis-dependent mechanism. Required for normal brain development. Facilitates developmentally-regulated apoptosis during neural tube development. Required for a normal rate of cytochrome c release and caspase activation during apoptosis. Also required for mitochondrial fission during mitosis. May be involved in vesicle transport.

Isoform 1 and isoform 4 inhibit peroxisomal division when overexpressed.

Tissue specificity

Ubiquitously expressed with highest levels found in skeletal muscles, heart, kidney and brain. Isoform 1 is brain-specific. Isoform 2 and isoform 3 are predominantly expressed in testis and skeletal muscles respectively. Isoform 4 is weakly expressed in brain, heart and kidney. Isoform 5 is dominantly expressed in liver, heart and kidney. Isoform 6 is expressed in neurons.

Involvement in disease

Note=May be associated with Alzheimer disease through beta-amyloid-induced increased S-nitrosylation of DNM1L, which triggers, directly or indirectly, excessive mitochondrial fission, synaptic loss and neuronal damage.

Sequence similarities

Belongs to the dynamin family.
Contains 1 GED domain.

Domain

The GED domain folds back to interact, in cis, with the GTP-binding domain and middle domain, and interacts, in trans, with the GED domains of other DNM1L molecules, and is thus critical for activating GTPase activity and for DNM1L dimerization.

Post-translational modifications

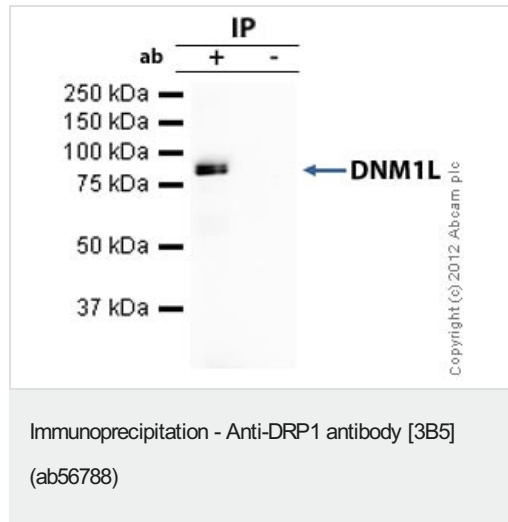
Phosphorylation/dephosphorylation events on two sites near the GED domain regulate mitochondrial fission. Phosphorylation on Ser-637 inhibits mitochondrial fission probably through preventing intramolecular interaction. Dephosphorylated on this site by PPP3CA which promotes mitochondrial fission. Phosphorylation on Ser-616 also promotes mitochondrial fission. Sumoylated on various lysine residues within the B domain. Desumoylated by SENP5 during G2/M transition of mitosis. Appears to be linked to its catalytic activity. S-nitrosylation increases DNM1L dimerization, mitochondrial fission and causes neuronal damage. Ubiquitination by MARCH5 affects mitochondrial morphology.

Cellular localization

Cytoplasm > cytosol. Golgi apparatus. Endomembrane system. Mainly cytosolic. Translocated to

the mitochondrial membrane through interaction with FIS1. Colocalized with MARCH5 at mitochondrial membrane. Localizes to mitochondria at sites of division. Associated with peroxisomal membranes, partly recruited there by PEX11B. May also be associated with endoplasmic reticulum tubules and cytoplasmic vesicles and found to be perinuclear. In some cell types, localizes to the Golgi complex.

Images



DNM1L was immunoprecipitated using 0.5mg Hek293 whole cell extract, 10µg of Mouse monoclonal to DNM1L and 50µl of protein G magnetic beads (+). No antibody was added to the control (-).

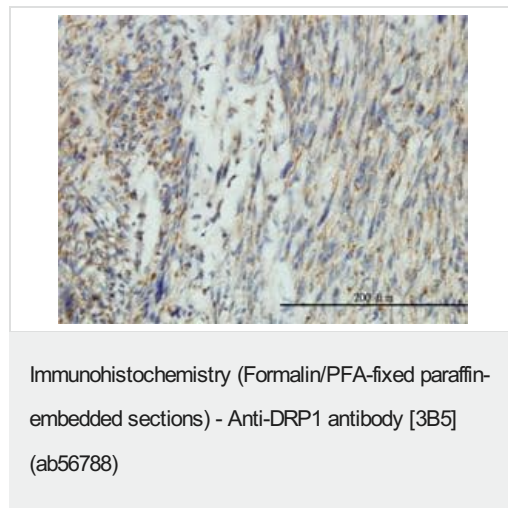
The antibody was incubated under agitation with Protein G beads for 10min, Hek293 whole cell extract lysate diluted in RIPA buffer was added to each sample and incubated for a further 10min under agitation.

Proteins were eluted by addition of 40µl SDS loading buffer and incubated for 10min at 70°C; 10µl of each sample was separated on a SDS PAGE gel, transferred to a nitrocellulose membrane, blocked with 5% BSA and probed with ab56788.

Secondary: Goat polyclonal to mouse IgG light chain specific (HRP) at 1/5000 dilution.

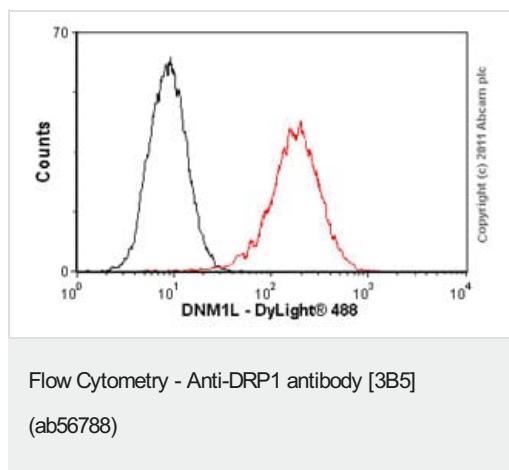
Band: 90kDa; DNM1L.

This image was generated using the ascites version of the product.



DNM1L antibody (ab56788) used in immunohistochemistry at 1ug/ml on formalin fixed and paraffin embedded human leiomyosarcoma tissue.

This image was generated using the ascites version of the product.



Overlay histogram showing HEK293 cells stained with ab56788 (red line). The cells were fixed with 4% paraformaldehyde (10 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 (ab56788, 1 µg/1x10⁶ cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) ([ab96879](#)) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2b [PLPV219] ([ab91366](#), 2 µg/1x10⁶ cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in HEK293 cells fixed with 100% methanol (5 min)/permeabilized in 0.1% PBS-Tween used under the same conditions.

This image was generated using the ascites version of the product.

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