abcam

Product datasheet

Anti-DRP1 (phospho S637) antibody ab193216

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Overview

Product name	Anti-DRP1 (phospho S637) antibody
Description	Rabbit polyclonal to DRP1 (phospho S637)
Host species	Rabbit
Tested applications	**Suitable for:** WB
Species reactivity	**Reacts with:** Human **Predicted to work with:** Mouse, Rat
Immunogen	Synthetic peptide within Human DRP1 (phospho S637). The exact sequence is proprietary. NCBI Protein#: NP_036192.2. Database link: **O00429**
Positive control	WB: Jurkat and K562 cell extracts; 293 whole cell lysates
General notes	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. 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

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
Storage buffer	pH: 7.40 Preservative: 0.02% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine), 0.87% Sodium chloride PBS is without Mg^{2+} and Ca^{2+}
Purity	Immunogen affinity purified
Purification notes	ab193216 was purified by affinity-chromatography using an-epitope specific phosphopeptide. Non-phosphopeptide specific antibodies were removed by chromatography using non-

	phosphopeptide.
Clonality	Polyclonal
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab193216 in the following tested applications.

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

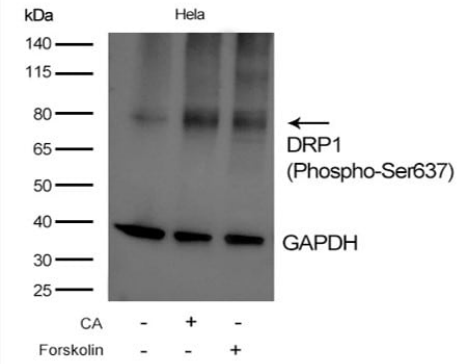
Application	Abreviews	Notes
WB	★★★☆☆ **(4)**	1/500 - 1/1000. Predicted molecular weight: 82 kDa.

Target

Function	Functions in mitochondrial and peroxisomal division. Mediates membrane fission through oligomerization into ring-like structures which wrap around the scission site to constict 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 fissin 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



Western blot - Anti-DRP1 (phospho S637) antibody (ab193216)

All lanes : Anti-DRP1 (phospho S637) antibody (ab193216) at 1/500 dilution

Lane 1 : Hela whole cell lysate
Lane 2 : Hela whole cell lysate treated with 100nM Calyculin A for 30min
Lane 3 : Hela whole cell lysate treated with 10 µM Forskolin for 30min

Lysates/proteins at 40 µg per lane.

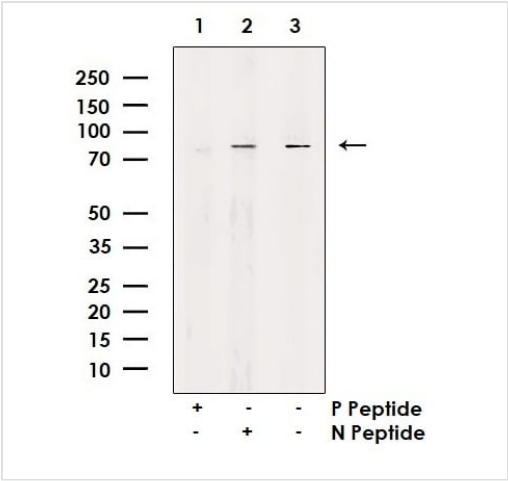
Secondary
All lanes : Goat Anti-Rabbit IgG at 1/20000 dilution

Developed using the ECL technique.

Predicted band size: 82 kDa
Observed band size: 82 kDa

Exposure time: 30 seconds

Blocking and diluting buffer and concentration: 5% TBST

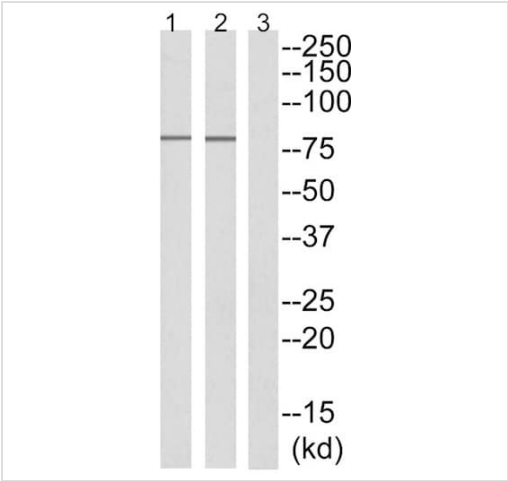


Western blot - Anti-DRP1 (phospho S637) antibody (ab193216)

All lanes : Anti-DRP1 (phospho S637) antibody (ab193216)

Lane 1 : 293 whole cell lysates with phospho-blocking peptide (P-Peptide) treatment
Lane 2 : 293 whole cell lysates with non-phospho-blocking peptide (N-Peptide) treatment
Lane 3 : 293 whole cell lysates with no treatment

Predicted band size: 82 kDa



Western blot - Anti-DRP1 (phospho S637) antibody (ab193216)

All lanes : Anti-DRP1 (phospho S637) antibody (ab193216) at 1/500 dilution

Lane 1 : Jurkat (Human T cell leukemia cell line from peripheral blood) cell extract
Lane 2 : K562 (Human chronic myelogenous leukemia cell line from bone marrow) cell extract
Lane 3 : K562 (Human chronic myelogenous leukemia cell line from bone marrow) cell extract with antigen-specific peptide

Predicted band size: 82 kDa

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