

DRP1 (H-300): sc-32898

BACKGROUND

Dynamin-related protein 1 (DRP1) mediates outer mitochondrial membrane fission in mammalian cells. DRP1 is also known as Dynamin-like protein 1, (Dlp1), DVLP or Dymple. DRP1 contains the N-terminal tripartite GTP-binding domain characteristic of the Dynamin superfamily of GTPases. DRP1 exists as a T shaped dimer which contains a head, leg and stalk. The addition of GTP induces a rearrangement of the head and stalk that generates a force that ultimately results in membrane constriction. DRP1 is ubiquitously expressed with abundant expression in skeletal muscle, heart, kidney and brain. In the cell, DRP1 localized to the perinuclear region. In mouse brain, DRP1 is highly expressed in the cerebellum with particularly high levels in cerebellar Purkinje cells. During apoptosis, DRP1 translocates from the cytosol to mitochondria and localizes to potential sites of organelle division. Cell death is averted upon DRP inhibition, suggesting a critical role for mitochondrial fission in apoptosis.

CHROMOSOMAL LOCATION

Genetic locus: DNM1L (human) mapping to 12p11.21; Dnm1l (mouse) mapping to 16 A2.

SOURCE

DRP1 (H-300) is a rabbit polyclonal antibody raised against amino acids 560-736 mapping at the C-terminus of DRP1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

DRP1 (H-300) is recommended for detection of all DRP1 isoforms of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

DRP1 (H-300) is also recommended for detection of all DRP1 isoforms in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for DRP1 siRNA (h): sc-43732, DRP1 siRNA (m): sc-45953, DRP1 shRNA Plasmid (h): sc-43732-SH, DRP1 shRNA Plasmid (m): sc-45953-SH, DRP1 shRNA (h) Lentiviral Particles: sc-43732-V and DRP1 shRNA (m) Lentiviral Particles: sc-45953-V.

Molecular Weight of DRP1: 80 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203 or DRP1 (h3): 293T Lysate: sc-171970.

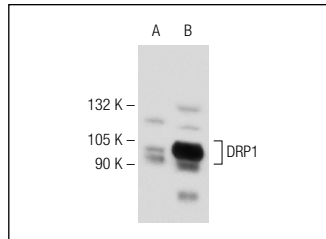
STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

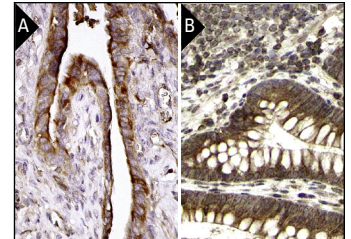
RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA



DRP1 (H-300): sc-32898. Western blot analysis of DRP1 expression in non-transfected: sc-117752 (A) and human DRP1 transfected: sc-171970 (B) 293T whole cell lysates.



DRP1 (H-300): sc-32898. Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue showing cytoplasmic staining of glandular cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing cytoplasmic staining of glandular cells magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

SELECT PRODUCT CITATIONS

- Ju, W.K., et al. 2007. Elevated hydrostatic pressure triggers mitochondrial fission and decreases cellular ATP in differentiated RGC-5 cells. *Invest. Ophthalmol. Vis. Sci.* 48: 2145-2151.
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- Nantajit, D., et al. 2010. Cyclin B1/Cdk1 phosphorylation of mitochondrial p53 induces anti-apoptotic response. *PLoS ONE* 5: e12341.
- Todd, L.R., et al. 2010. Growth factor erv1-like modulates Drp1 to preserve mitochondrial dynamics and function in mouse embryonic stem cells. *Mol. Biol. Cell* 21: 1225-1236.
- Baixaui, F., et al. 2011. The mitochondrial fission factor dynamin-related protein 1 modulates T-cell receptor signalling at the immune synapse. *EMBO J.* 30: 1238-1250.
- Sastre-Serra, J., et al. 2012. Mitochondrial dynamics is affected by 17β-estradiol in the MCF-7 breast cancer cell line. Effects on fusion and fission related genes. *Int. J. Biochem. Cell Biol.* 44: 1901-1905.
- Qi, Z., et al. 2012. Increased Insulin sensitivity and distorted mitochondrial adaptations during muscle unloading. *Int. J. Mol. Sci.* 13: 16971-16985.
- Kumari, S., et al. 2012. Hyperglycemia alters mitochondrial fission and fusion proteins in mice subjected to cerebral ischemia and reperfusion. *Transl. Stroke Res.* 3: 296-304.


 MONOS
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Try **DRP1 (C-5): sc-271583** or **DRP1 (6Z-82): sc-101270**, our highly recommended monoclonal alternatives to DRP1 (H-300). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **DRP1 (C-5): sc-271583**.