

# DRP1 (C-5): sc-271583

## 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 (C-5) is a mouse monoclonal antibody raised against amino acids 560-736 mapping at the C-terminus of DRP1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

DRP1 (C-5) is available conjugated to agarose (sc-271583 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271583 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271583 PE), fluorescein (sc-271583 FITC), Alexa Fluor® 488 (sc-271583 AF488), Alexa Fluor® 546 (sc-271583 AF546), Alexa Fluor® 594 (sc-271583 AF594) or Alexa Fluor® 647 (sc-271583 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271583 AF680) or Alexa Fluor® 790 (sc-271583 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

DRP1 (C-5) is recommended for detection of all DRP1 isoforms of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

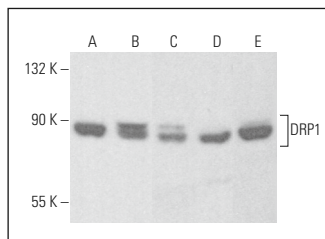
Suitable for use as control antibody for DRP1 siRNA (h): sc-43732, DRP1 siRNA (m): sc-45953, DRP1 siRNA (r): sc-270298, DRP1 shRNA Plasmid (h): sc-43732-SH, DRP1 shRNA Plasmid (m): sc-45953-SH, DRP1 shRNA Plasmid (r): sc-270298-SH, DRP1 shRNA (h) Lentiviral Particles: sc-43732-V, DRP1 shRNA (m) Lentiviral Particles: sc-45953-V and DRP1 shRNA (r) Lentiviral Particles: sc-270298-V.

Molecular Weight of DRP1: 80 kDa.

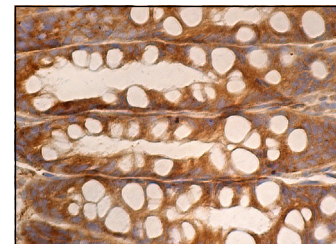
## STORAGE

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

## DATA



DRP1 (C-5): sc-271583. Western blot analysis of DRP1 expression in K-562 (A), A549 (B), U-251-MG (C), NIH/3T3 (D) and C6 (E) whole cell lysates.



DRP1 (C-5): sc-271583. Immunoperoxidase staining of formalin fixed, paraffin-embedded human rectum tissue showing cytoplasmic staining of glandular cells.

## SELECT PRODUCT CITATIONS

- Faccenda, D., et al. 2013. IF1 limits the apoptotic-signalling cascade by preventing mitochondrial remodelling. *Cell Death Differ.* 20: 686-697.
- Neary, M.T., et al. 2014. Hypoxia signaling controls postnatal changes in cardiac mitochondrial morphology and function. *J. Mol. Cell. Cardiol.* 74: 340-352.
- Zhou, J., et al. 2015. A novel autophagy/mitophagy inhibitor liensinine sensitizes breast cancer cells to chemotherapy through DNM1L-mediated mitochondrial fission. *Autophagy* 11: 1259-1279.
- Tangmansakulchai, K., et al. 2016. Calpastatin overexpression reduces oxidative stress-induced mitochondrial impairment and cell death in human neuroblastoma SH-SY5Y cells by decreasing calpain and calcineurin activation, induction of mitochondrial fission and destruction of mitochondrial fusion. *Mitochondrion* 30: 151-161.
- Sun, Y., et al. 2017. Haploinsufficiency in the mitochondrial protein CHCHD4 reduces brain injury in a mouse model of neonatal hypoxia-ischemia. *Cell Death Dis.* 8: e2781.
- Fouda, A.Y., et al. 2018. Arginase 1 promotes retinal neurovascular protection from ischemia through suppression of macrophage inflammatory responses. *Cell Death Dis.* 9: 1001.
- Rademaker, G., et al. 2019. Human colon cancer cells highly express myoferlin to maintain a fit mitochondrial network and escape p53-driven apoptosis. *Oncogenesis* 8: 21.
- Koo, J.H. and Kang, E.B. 2019. Effects of treadmill exercise on the regulatory mechanisms of mitochondrial dynamics and oxidative stress in the brains of high-fat diet fed rats. *J. Exerc. Nutrition Biochem.* 23: 28-35.

## RESEARCH USE

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

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