

DRP1 (h): 293T Lysate: sc-113653

BACKGROUND

Dynamin-related protein 1 (DRP1) mediates outer mitochondrial membrane fission in mammalian cells and 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.

REFERENCES

1. Shin, H.W., Shinotsuka, C., Torii, S., Murakami, K. and Nakayama, K. 1997. Identification and subcellular localization of a novel mammalian Dynamin-related protein homologous to yeast Vps1p and Dnm1p. *J. Biochem.* 122: 525-530.
2. Imoto, M., Tachibana, I. and Urrutia, R. 1998. Identification and functional characterization of a novel human protein highly related to the yeast Dynamin-like GTPase Vps1p. *J. Cell Sci.* 111: 1341-1349.
3. Frank, S., Gaume, B., Bergmann-Leitner, E.S., Leitner, W.W., Robert, E.G., Catez, F., Smith, C.L. and Youle, R.J. 2001. The role of Dynamin-related protein 1, a mediator of mitochondrial fission, in apoptosis. *Dev. Cell* 1: 515-525.
4. Smirnova, E., Griparic, L., Shurland, D.L. and van der Bliek, A.M. 2001. Dynamin-related protein DRP1 is required for mitochondrial division in mammalian cells. *Mol. Biol. Cell* 12: 2245-2256.
5. Zhang, P. and Hinshaw, J.E. 2001. Three-dimensional reconstruction of Dynamin in the constricted state. *Nat. Cell Biol.* 3: 922-926.
6. Misaka, T., Miyashita, T. and Kubo, Y. 2002. Primary structure of a Dynamin-related mouse mitochondrial GTPase and its distribution in brain, subcellular localization, and effect on mitochondrial morphology. *J. Biol. Chem.* 277: 15834-15842.

CHROMOSOMAL LOCATION

Genetic locus: DNM1L (human) mapping to 12p11.21.

PRODUCT

DRP1 (h): 293T Lysate represents a lysate of human DRP1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

DRP1 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive DRP1 antibodies. Recommended use: 10-20 µl per lane.

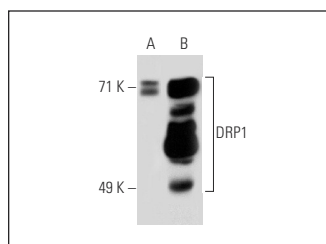
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

DRP1 (6Z-82): sc-101270 is recommended as a positive control antibody for Western Blot analysis of enhanced human DRP1 expression in DRP1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



DRP1 (6Z-82): sc-101270. Western blot analysis of DRP1 expression in non-transfected: sc-117752 (A) and human DRP1 transfected: sc-113653 (B) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.