

PTRH2 (P-13): sc-324239

BACKGROUND

PTRH2 (peptidyl-tRNA hydrolase 2), also known as BIT1 (Bcl-2 inhibitor of transcription 1), is a 179 amino acid mitochondrial protein. During apoptosis, PTRH2 is released from the mitochondria to the cytoplasm. Once in the cytoplasm, PTRH2 regulates the function of two transcriptional regulators, TLE5 and TLE1, thereby promoting caspase-independent cell death. It is also believed that the natural substrate for PTRH2 may be peptidyl-tRNAs, which leave the ribosomes during protein synthesis. PTRH2 is a monomer that contains a N-terminal mitochondrial localization signal and a C-terminal UPF0099 domain.

REFERENCES

- Lai, C.H., Chou, C.Y., Ch'ang, L.Y., Liu, C.S. and Lin, W. 2000. Identification of novel human genes evolutionarily conserved in *Caenorhabditis elegans* by comparative proteomics. *Genome Res.* 10: 703-713.
- Jan, Y., Matter, M., Pai, J.T., Chen, Y.L., Pilch, J., Komatsu, M., Ong, E., Fukuda, M. and Ruoslahti, E. 2004. A mitochondrial protein, BIT1, mediates apoptosis regulated by integrins and Groucho/TLE corepressors. *Cell* 116: 751-762.
- De Pereda, J.M., Waas, W.F., Jan, Y., Ruoslahti, E., Schimmel, P. and Pascual, J. 2004. Crystal structure of a human peptidyl-tRNA hydrolase reveals a new fold and suggests basis for a bifunctional activity. *J. Biol. Chem.* 279: 8111-8115.
- Gonzalez de Valdivia, E.I. and Isaksson, L.A. 2005. Abortive translation caused by peptidyl-tRNA drop-off at NGG codons in the early coding region of mRNA. *FEBS J.* 272: 5306-5316.
- Selvaraj, M., Singh, N.S., Roy, S., Sangeetha, R., Varshney, U. and Vijayan, M. 2006. Cloning, expression, purification, crystallization and preliminary X-ray analysis of peptidyl-tRNA hydrolase from *Mycobacterium tuberculosis*. *Acta Crystallogr. Sect. F Struct. Biol. Cryst. Commun.* 62: 913-915.
- Ishii, T., Funakoshi, M. and Kobayashi, H. 2006. Yeast Pth2 is a UBL domain-binding protein that participates in the ubiquitin-proteasome pathway. *EMBO J.* 25: 5492-5503.
- Bouchentouf, M., Benabdallah, B.F., Rousseau, J., Schwartz, L.M. and Tremblay, J.P. 2007. Induction of Anoikis following myoblast transplantation into SCID mouse muscles requires the BIT1 and FADD pathways. *Am. J. Transplant.* 7: 1491-1505.
- Biliran, H., Jan, Y., Chen, R., Pasquale, E.B. and Ruoslahti, E. 2008. Protein kinase D is a positive regulator of BIT1 apoptotic function. *J. Biol. Chem.* 283: 28029-28037.
- Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 608625. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: PTRH2 (human) mapping to 17q23.1.

SOURCE

PTRH2 (P-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of PTRH2 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-324239 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PTRH2 (P-13) is recommended for detection of PTRH2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with PTRH1.

PTRH2 (P-13) is also recommended for detection of PTRH2 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PTRH2 siRNA (h): sc-76295, PTRH2 shRNA Plasmid (h): sc-76295-SH and PTRH2 shRNA (h) Lentiviral Particles: sc-76295-V.

Molecular Weight of PTRH2: 20 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.

PROTOCOLS

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