SANTA CRUZ BIOTECHNOLOGY, INC.

PTRH2 siRNA (m): sc-76296

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 mitochondia 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 petidyl-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

1. Lai, C.H., et al. 2000. Identification of novel human genes evolutionarily conserved in *Caenorhabditis elegans* by comparative proteomics. Genome Res. 10: 703-713.
2. Jan, Y., et al. 2004. A mitochondrial protein, Bit1, mediates apoptosis regulated by integrins and Groucho/TLE corepressors. Cell 116: 751-762.
3. De Pereda, J.M., et al. 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.
4. 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.
5. Selvaraj, M., et al. 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.
6. Ishii, T., et al. 2006. Yeast Pth2 is a UBL domain-binding protein that participates in the ubiquitin-proteasome pathway. EMBO J. 25: 5492-5503.
7. Bouchentouf, M., et al. 2007. Induction of Anoikis following myoblast transplantation into SCID mouse muscles requires the Bit1 and FADD pathways. Am. J. Transplant. 7: 1491-1505.

CHROMOSOMAL LOCATION

Genetic locus: Ptrh2 (mouse) mapping to 11 C.

PRODUCT

PTRH2 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PTRH2 shRNA Plasmid (m): sc-76296-SH and PTRH2 shRNA (m) Lentiviral Particles: sc-76296-V as alternate gene silencing products.

For independent verification of PTRH2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-76296A, sc-76296B and sc-76296C.

RESEARCH USE

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

PTRH2 siRNA (m) is recommended for the inhibition of PTRH2 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PTRH2 gene expression knockdown using RT-PCR Primer: PTRH2 (m)-PR: sc-76296-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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