

Peroxin 1 siRNA (h): sc-44927

BACKGROUND

Peroxisomes are single-membrane bound organelles present in virtually all eukaryotic cells. They are involved in numerous catabolic and anabolic pathways, including β -oxidation of very long chain fatty acids, metabolism of hydrogen peroxide, plasmalogen biosynthesis and bile acid synthesis. The Peroxin gene family, which includes more than 20 members, is required for peroxisome biogenesis. Peroxin 1 is required for stability of Pex5 and protein import into the peroxisome matrix. Peroxin 1 is anchored by Pex26 to peroxisome membranes, to form heteromeric AAA ATPase complexes required for the import of proteins into peroxisomes.

REFERENCES

1. Gartner, J. 2000. Organelle disease: peroxisomal disorders. *Eur. J. Pediatr.* 159: S236-S239.
2. Collins, C.S., et al. 2000. The peroxisome biogenesis factors Pex4p, Pex22p, Pex1p and Pex6p act in the terminal steps of peroxisomal matrix protein import. *Mol. Cell. Biol.* 20: 7516-7526.
3. Fujiki, Y. 2000. Peroxisome biogenesis and peroxisome biogenesis disorders. *FEBS Lett.* 476: 42-46.
4. Brosius, U. and Gartner, J. 2002. Cellular and molecular aspects of Zellweger syndrome and other peroxisome biogenesis disorders. *Cell. Mol. Life Sci.* 59: 1058-1069.
5. Honsho, M., et al. 2002. The membrane biogenesis peroxin Pex16p. Topogenesis and functional roles in peroxisomal membrane assembly. *J. Biol. Chem.* 277: 44513-44524.
6. Matsumoto, N., et al. 2003. The pathogenic peroxin Pex26p recruits the Pex1p-Pex6p AAA ATPase complexes to peroxisomes. *Nat. Cell Biol.* 5: 454-460.
7. Costa-Rodrigues, J., et al. 2004. The N-terminus of the peroxisomal cycling receptor, Pex5p, is required for redirecting the peroxisome-associated peroxin back to the cytosol. *J. Biol. Chem.* 279: 46573-46579.

CHROMOSOMAL LOCATION

Genetic locus: PEX1 (human) mapping to 7q21.2.

PRODUCT

Peroxin 1 siRNA (h) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Peroxin 1 shRNA Plasmid (h): sc-44927-SH and Peroxin 1 shRNA (h) Lentiviral Particles: sc-44927-V as alternate gene silencing products.

For independent verification of Peroxin 1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-44927A, sc-44927B and sc-44927C.

PROTOCOLS

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

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Peroxin 1 siRNA (h) is recommended for the inhibition of Peroxin 1 expression in human 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 μ M in 66 μ l. 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.

GENE EXPRESSION MONITORING

Peroxin 1 (D-9): sc-393174 is recommended as a control antibody for monitoring of Peroxin 1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Peroxin 1 gene expression knockdown using RT-PCR Primer: Peroxin 1 (h)-PR: sc-44927-PR (20 μ l, 584 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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