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SANTA CRUZ BIOTECHNOLOGY, INC.

Peroxin 3 siRNA (m): sc-152174

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 family, which includes more than 20 members, is required for peroxisome biogenesis. Peroxin 3, also known as PEX3 (peroxisomal biogenesis factor 3) or TRG18, is a 373 amino acid multi-pass membrane protein that localizes to peroxisomes and belongs to the Peroxin family. Expressed ubiquitously, Peroxin 3 interacts with Peroxin 19 and is involved in peroxisome biosynthesis and membrane vesicle assembly, as well as in the maintenance of peroxisomal integrity. Additionally, Peroxin 3 acts as a docking factor for Peroxin 19 and is required for the import of peroxisomal proteins. Defects in the gene encoding Peroxin 3 are the cause of peroxisome biogenesis disorder complementation group 12 (PBD-CG12) and Zellweger syndrome (ZwS), both of which arise from a failure of peroxisomal protein import.

REFERENCES

1. Kammerer, S., et al. 1998. Cloning and characterization of the gene encoding the human peroxisomal assembly protein Pex3p. FEBS Lett. 429: 53-60.
2. Muntau, A.C., et al. 2000. Defective peroxisome membrane synthesis due to mutations in human PEX3 causes Zellweger syndrome, complementation group G. Am. J. Hum. Genet. 67: 967-975.
3. Ghaedi, K., et al. 2000. PEX3 is the causal gene responsible for peroxisome membrane assembly-defective Zellweger syndrome of complementation group G. Am. J. Hum. Genet. 67: 976-981.
4. Muntau, A.C., et al. 2000. The human PEX3 gene encoding a peroxisomal assembly protein: genomic organization, positional mapping, and mutation analysis in candidate phenotypes. Biochem. Biophys. Res. Commun. 268: 704-710.
5. Mayerhofer, P.U., et al. 2002. Two splice variants of human PEX19 exhibit distinct functions in peroxisomal assembly. Biochem. Biophys. Res. Commun. 291: 1180-1186.
6. Muntau, A.C., et al. 2003. Interaction of PEX3 and PEX19 visualized by fluorescence resonance energy transfer (FRET). Adv. Exp. Med. Biol. 544: 221-224.

CHROMOSOMAL LOCATION

Genetic locus: Pex3 (mouse) mapping to 10 A2.

PRODUCT

Peroxin 3 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 Peroxin 3 shRNA Plasmid (m): sc-152174-SH and Peroxin 3 shRNA (m) Lentiviral Particles: sc-152174-V as alternate gene silencing products.

For independent verification of Peroxin 3 (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-152174A, sc-152174B and sc-152174C.

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

Peroxin 3 siRNA (m) is recommended for the inhibition of Peroxin 3 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 Peroxin 3 gene expression knockdown using RT-PCR Primer: Peroxin 3 (m)-PR: sc-152174-PR (20 µl). 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.

PROTOCOLS

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