SANTA CRUZ BIOTECHNOLOGY, INC.

Peroxin 11α siRNA (h): sc-89978

BACKGROUND

Peroxisomes are single-membrane bounds 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 11α (peroxisomal biogenesis factor 11 α), also known as peroxisomal membrane protein 11A, PEX11A, PEX11-α, MGC119947, MGC138534, Pex11pα, HsPEX11p or PMP28, is a 247 amino acid multi-pass membrane protein that localilzes to the peroxisome membrane and belongs to the Peroxin11 family. Peroxin 11α is known to promote peroxisome proliferation, mediate peroxisome division and regulate coatomer protein binding to the peroxisomal membrane. Peroxin 11α is highly expressed in kidney and the gene encoding Peroxin 11α maps to human chromosome 15q26.1.

REFERENCES

1. Abe, I., et al. 1998. Clofibrate-inducible, 28-kDa peroxisomal integral membrane protein is encoded by PEX11. FEBS Lett. 431: 468-472.
2. Schrader, M., et al. 1998. Expression of PEX11β mediates peroxisome proliferation in the absence of extracellular stimuli. J. Biol. Chem. 273: 29607-29614.
3. Li, X., et al. 2002. PEX11alpha is required for peroxisome proliferation in response to 4-phenylbutyrate but is dispensable for peroxisome proliferator-activated receptor α-mediated peroxisome proliferation. Mol. Cell. Biol. 22: 8226-8240.
4. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 603866. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Shimizu, M., et al. 2006. Peroxisome proliferator-activated receptor subtypes differentially cooperate with other transcription factors in selective transactivation of the perilipin/PEX11 α gene pair. J. Biochem. 139: 563-573.
6. Orth, T., et al. 2007. The PEROXIN11 protein family controls peroxisome proliferation in *Arabidopsis*. Plant Cell 19: 333-350.

CHROMOSOMAL LOCATION

Genetic locus: PEX11A (human) mapping to 15q26.1.

PRODUCT

Peroxin 11α siRNA (h) is a pool of 2 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 11α shRNA Plasmid (h): sc-89978-SH and Peroxin 11α shRNA (h) Lentiviral Particles: sc-89978-V as alternate gene silencing products.

For independent verification of Peroxin 11α (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-89978A and sc-89978B.

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 11α siRNA (h) is recommended for the inhibition of Peroxin 11α 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 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.

GENE EXPRESSION MONITORING

Peroxin 11α (3B1): sc-293410 is recommended as a control antibody for monitoring of Peroxin 11α 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-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. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 11α gene expression knockdown using RT-PCR Primer: Peroxin 11α (h)-PR: sc-89978-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.