

# Peroxin 11 $\gamma$ siRNA (h): sc-97536

## BACKGROUND

Peroxisomes are single-membrane bound organelles present in virtually all eukaryotic cells. They are involved in numerous catabolic and anabolic pathways, including  $\beta$ -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. The Peroxin 11 peroxisomal membrane proteins are the only factors known to promote peroxisome division in multiple species. Peroxin 11 proteins have a direct role in peroxisomal fatty acid oxidation and only affect peroxisome abundance indirectly. Peroxin 11 $\gamma$  (peroxisomal biogenesis factor 11  $\gamma$ ), also known as PEX11G or Peroxin-11C, is a 241 amino acid multi-pass membrane protein that belongs to the peroxin 11 family. Peroxin 11 $\gamma$  exist as two isoforms due to alternative splicing events.

## REFERENCES

- Li, X. and Gould, S.J. 2002. PEX11 promotes peroxisome division independently of peroxisome metabolism. *J. Cell Biol.* 156: 643-651.
- Li, X., Baumgart, E., Dong, G.X., Morrell, J.C., Jimenez-Sanchez, G., Valle, D., Smith, K.D. and Gould, S.J. 2002. PEX11 $\alpha$  is required for peroxisome proliferation in response to 4-phenylbutyrate but is dispensable for peroxisome proliferator-activated receptor  $\alpha$ -mediated peroxisome proliferation. *Mol. Cell. Biol.* 22: 8226-8240.
- Tanaka, A., Okumoto, K. and Fujiki, Y. 2003. cDNA cloning and characterization of the third isoform of human peroxin PEX11p. *Biochem. Biophys. Res. Commun.* 300: 819-823.
- Li, X. and Gould, S.J. 2003. The Dynamin-like GTPase DLP1 is essential for peroxisome division and is recruited to peroxisomes in part by PEX11. *J. Biol. Chem.* 278: 17012-17020.
- Thoms, S. and Erdmann, R. 2005. Dynamin-related proteins and PEX11 proteins in peroxisome division and proliferation. *FEBS J.* 272: 5169-5181.
- Schrader, M. and Fahimi, H.D. 2006. Growth and division of peroxisomes. *Int. Rev. Cytol.* 255: 237-290.
- Fagarasanu, A., Fagarasanu, M. and Rachubinski, R.A. 2007. Maintaining peroxisome populations: a story of division and inheritance. *Annu. Rev. Cell Dev. Biol.* 23: 321-344.

## CHROMOSOMAL LOCATION

Genetic locus: PEX11G (human) mapping to 19p13.2.

## PRODUCT

Peroxin 11 $\gamma$  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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Peroxin 11 $\gamma$  shRNA Plasmid (h): sc-97536-SH and Peroxin 11 $\gamma$  shRNA (h) Lentiviral Particles: sc-97536-V as alternate gene silencing products.

For independent verification of Peroxin 11 $\gamma$  (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-97536A and sc-97536B.

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

## APPLICATIONS

Peroxin 11 $\gamma$  siRNA (h) is recommended for the inhibition of Peroxin 11 $\gamma$  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  $\mu$ M in 66  $\mu$ 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Peroxin 11 $\gamma$  gene expression knockdown using RT-PCR Primer: Peroxin 11 $\gamma$  (h)-PR: sc-97536-PR (20  $\mu$ l). 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](http://www.scbt.com) for detailed protocols and support products.