

PECI siRNA (h): sc-76104

BACKGROUND

PECI (peroxisomal Δ^3, Δ^2 -enoyl-CoA isomerase), also known as DRS1, ACBD2 or HCA88, is a 359 amino acid protein that localizes to the peroxisomal matrix and contains one ACB (acyl-CoA-binding) domain. Expressed abundantly in liver, heart and skeletal muscle, PECI functions to catalyze the isomerization of both 3-*cis* and 3-*trans* double bonds into the 2-*trans* form in a range of enoyl-CoA species, playing an important role in the β -oxidation of unsaturated fatty acids. The gene encoding PECI maps to human chromosome 6, which contains 170 million base pairs and comprises nearly 6% of the human genome. Deletion of a portion of the q arm of chromosome 6 is associated with early onset intestinal cancer, suggesting the presence of a cancer susceptibility locus. Additionally, Porphyria cutanea tarda, Parkinson's disease, Stickler syndrome and a susceptibility to bipolar disorder are all associated with genes that map to chromosome 6.

REFERENCES

- Hiltunen, J.K., et al. 1996. Peroxisomal β -oxidation and polyunsaturated fatty acids. *Ann. N.Y. Acad. Sci.* 804: 116-128.
- Suk, K., et al. 1999. Molecular cloning and expression of a novel human cDNA related to the diazepam binding inhibitor. *Biochim. Biophys. Acta* 1454: 126-131.
- Geisbrecht, B.V., et al. 1999. Characterization of PECI, a novel monofunctional Δ^3, Δ^2 -enoyl-CoA isomerase of mammalian peroxisomes. *J. Biol. Chem.* 274: 21797-21803.
- Janssen, U. and Stoffel, W. 2002. Disruption of mitochondrial β -oxidation of unsaturated fatty acids in the 3,2-*trans*-enoyl-CoA isomerase-deficient mouse. *J. Biol. Chem.* 277: 19579-19584.
- Online Mendelian Inheritance in Man, OMIM[™]. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 608024. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- McQueen, M.B., et al. 2005. Combined analysis from eleven linkage studies of bipolar disorder provides strong evidence of susceptibility loci on chromosomes 6q and 8q. *Am. J. Hum. Genet.* 77: 582-595.
- Goepfert, S., et al. 2008. Peroxisomal Δ^3, Δ^2 -enoyl-CoA isomerases and evolution of cytosolic paralogues in embryophytes. *Plant J.* 56: 728-742.

CHROMOSOMAL LOCATION

Genetic locus: ECI2 (human) mapping to 6p25.2.

PRODUCT

PECI 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 PECI shRNA Plasmid (h): sc-76104-SH and PECI shRNA (h) Lentiviral Particles: sc-76104-V as alternate gene silencing products.

For independent verification of PECI (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-76104A, sc-76104B and sc-76104C.

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

PECI siRNA (h) is recommended for the inhibition of PECI 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

PECI (32): sc-136374 is recommended as a control antibody for monitoring of PECI 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 PECI gene expression knockdown using RT-PCR Primer: PECI (h)-PR: sc-76104-PR (20 μ 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 for detailed protocols and support products.