SANTA CRUZ BIOTECHNOLOGY, INC.

CERKL siRNA (h): sc-94466

BACKGROUND

Ceramide metabolism plays a critical role in the viability of neuronal cells, and ceramide kinases convert ceramide into ceramide-1-phosphate, a protein involved in cellular apoptosis and survival. CERKL (ceramide kinase-like), also known as RP26, is a 558 amino acid protein that lacks observable ceramide-kinase activity. Existing as seven alternatively spliced isoforms, CERKL localizes to cytoplasm and nucleus, and is enriched in nucleoli. CERKL is expressed moderately in kidney, retina, lung, trachea, pancreas and testis, with lower levels found in brain, placenta and liver. Defects in the gene encoding CERKL may lead to retinitis pigmentosa type 26 (RP26), an autosomal recessive disorder characterized by retinal photoreceptor cell degeneration. Symptoms of RP26 include night vision blindness and loss of midperipheral visual field.

REFERENCES

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2. Sugiura, M., et al. 2002. Ceramide kinase, a novel lipid kinase. Molecular cloning and functional characterization. J. Biol. Chem. 277: 23294-23300.
3. Tuson, M., et al. 2004. Mutation of CERKL, a novel human ceramide kinase gene, causes autosomal recessive retinitis pigmentosa (RP26). Am. J. Hum. Genet. 74: 128-138.
4. Inagaki, Y., et al. 2006. Identification of a nuclear localization signal in the retinitis pigmentosa-mutated RP26 protein, ceramide kinase-like protein. Biochem. Biophys. Res. Commun. 343: 982-987.
5. Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 608381. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Tang, Z., et al. 2009. Novel compound heterozygous mutations in CERKL cause autosomal recessive retinitis pigmentosa in a nonconsanguineous Chinese family. Arch. Ophthalmol. 127: 1077-1078.
7. Tuson, M., et al. 2009. Overexpression of CERKL, a gene responsible for retinitis pigmentosa in humans, protects cells from apoptosis induced by oxidative stress. Mol. Vis. 15: 168-180.

CHROMOSOMAL LOCATION

Genetic locus: CERKL (human) mapping to 2q31.3.

PRODUCT

CERKL 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 CERKL shRNA Plasmid (h): sc-94466-SH and CERKL shRNA (h) Lentiviral Particles: sc-94466-V as alternate gene silencing products.

For independent verification of CERKL (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-94466A and sc-94466B.

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

CERKL siRNA (h) is recommended for the inhibition of CERKL 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CERKL gene expression knockdown using RT-PCR Primer: CERKL (h)-PR: sc-94466-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.