SANTA CRUZ BIOTECHNOLOGY, INC.

Ces1d siRNA (m): sc-72875

BACKGROUND

CES proteins are carboxylesterases which belong to the type-B carboxylesterase/lipase family and are involved in the detoxification of a wide range of xenobiotics. Assisting the body in the detoxification of a wide range of xenobiotics, CES1 and CES2 are involved in hydrolyzing activation of therapeutic ester and amide pro-drugs, as well as in the detoxification of several narcotic compounds. CES3 localizes to the lumen of the endoplasmic reticulum where it functions to catalyze the H_2O-dependent conversion of carboxylic ester to alcohol and a carboxylate. CES5 is a secreted enzyme found in mammalian kidney and male reproductive fluids. CES6 (carboxylesterase 6) localizes to certain regions of the brain, including the cerebellum, and may participate in detoxification of drugs and xenobiotics in neural tissue and cerebrospinal fluid. Ces1d (carboxylesterase 1D), also known as TGH or Ces3, is a 565 amino acid murine protein belonging to the CES family.

REFERENCES

1. Hosokawa, M., et al. 2007. Genomic structure and transcriptional regulation of the rat, mouse, and human carboxylesterase genes. Drug Metab. Rev. 39: 1-15.
2. Holmes, R.S., et al. 2008. Opossum carboxylesterases: sequences, phylogeny and evidence for CES gene duplication events predating the marsupial-eutherian common ancestor. BMC Evol. Biol. 8: 54.
3. Holmes, R.S., et al. 2008. Mammalian carboxylesterase 5: comparative biochemistry and genomics. Comp. Biochem. Physiol. Part D Genomics Proteomics 3: 195-204.
4. Zhang, L., et al. 2009. Baculo-expression and enzymatic characterization of CES7 esterase. Acta Biochim. Biophys. Sin. 41: 731-736.
5. Zhang, L., et al. 2009. Identification and characterization of an epididymis-specific gene, Ces7. Acta Biochim. Biophys. Sin. 41: 809-815.
6. Sanghani, S.P., et al. 2009. Human carboxylesterases: an update on CES1, CES2 and CES3. Protein Pept. Lett. 16: 1207-1214.
7. Gang, L., et al. 2010. Accelerated evolution of CES7, a gene encoding a novel major urinary protein in the cat family. Mol. Biol. Evol. 28: 911-920.

CHROMOSOMAL LOCATION

Genetic locus: Ces1d (mouse) mapping to 8 C5.

PRODUCT

Ces1d 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 Ces1d shRNA Plasmid (m): sc-72875-SH and Ces1d shRNA (m) Lentiviral Particles: sc-72875-V as alternate gene silencing products.

For independent verification of Ces1d (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-72875A, sc-72875B and sc-72875C.

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

Ces1d siRNA (m) is recommended for the inhibition of Ces1d 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.

GENE EXPRESSION MONITORING

Ces1d (B-8): sc-374160 is recommended as a control antibody for monitoring of Ces1d 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 Ces1d gene expression knockdown using RT-PCR Primer: Ces1d (m)-PR: sc-72875-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.