SANTA CRUZ BIOTECHNOLOGY, INC.

CES8 siRNA (h): sc-93429

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 localizes to certain regions of the brain, including the cerebellum. CES7 is expressed in the epididymis. CES8 is a 561 amino acid secreted protein that functions as a carboxylase and exists as four alternatively spliced isoforms.

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.

CHROMOSOMAL LOCATION

Genetic locus: CES4A (human) mapping to 16q22.1.

PRODUCT

CES8 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CES8 shRNA Plasmid (h): sc-93429-SH and CES8 shRNA (h) Lentiviral Particles: sc-93429-V as alternate gene silencing products.

For independent verification of CES8 (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-93429A, sc-93429B and sc-93429C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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

CES8 siRNA (h) is recommended for the inhibition of CES8 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 CES8 gene expression knockdown using RT-PCR Primer: CES8 (h)-PR: sc-93429-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.