SANTA CRUZ BIOTECHNOLOGY, INC.

CES3 siRNA (h): sc-72874

BACKGROUND

CES1, CES2 and CES3 are the three major liver carboxylesterases which belong to the type-B carboxylesterase/lipase family and are involved in the detoxification of a wide range of xenobiotics. CES3, known as ES31 in rodents, is a 571 amino acid carboxylesterase that localizes to the lumen of the endoplasmic reticulum where it functions to catalyze the H_2O-dependent conversion of a carboxylic ester to an alcohol and a carboxylate. Via its catalytic activity, CES3, which is expressed in colon, liver and small intestine, plays a role in the hydrolysis of CPT 11, a drug used in cancer therapeutics. CES3 is subject to post-translational N-glycosylation and is encoded by a gene which maps to human chromosome 16q22.1.

REFERENCES

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2. Mori, M., et al. 1999. cDNA cloning, characterization and stable expression of novel human brain carboxylesterase. FEBS Lett. 458: 17-22.
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4. Sanghani, S.P., et al. 2004. Hydrolysis of irinotecan and its oxidative metabolites, 7-ethyl-10-[4-N-(5-aminopentanoic acid)-1-piperidino] carbonyloxycamptothecin and 7-ethyl-10-[4-(1-piperidino)-1-amino]-carbonyloxycamptothecin, by human carboxylesterases CES1A1, CES2, and a newly expressed carboxylesterase isoenzyme, CES3. Drug Metab. Dispos. 32: 505-511.
5. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 605279. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Williams, E.T., et al. 2008. Effect of buffer components and carrier solvents on in vitro activity of recombinant human carboxylesterases. J. Pharmacol. Toxicol. Methods 57: 138-144.
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CHROMOSOMAL LOCATION

Genetic locus: CES3 (human) mapping to 16q22.1.

PRODUCT

CES3 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 CES3 shRNA Plasmid (h): sc-72874-SH and CES3 shRNA (h) Lentiviral Particles: sc-72874-V as alternate gene silencing products.

For independent verification of CES3 (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-72874A, sc-72874B and sc-72874C.

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

CES3 siRNA (h) is recommended for the inhibition of CES3 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.

GENE EXPRESSION MONITORING

CES3 (B-5): sc-518245 is recommended as a control antibody for monitoring of CES3 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 CES3 gene expression knockdown using RT-PCR Primer: CES3 (h)-PR: sc-72874-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.