SANTA CRUZ BIOTECHNOLOGY, INC.

ASAH3 siRNA (m): sc-141288

BACKGROUND

ASAH3 (N-acylsphingosine amidohydrolase (alkaline ceramidase) 3), also designated ACER1, is a 264 amino acid multi-pass membrane protein that localizes to the membrane of the endoplasmic reticulum. Expressed predominately in epidermal tissue, ASAH3 catalyzes the hydrolysis of the sphingolipid ceramide into sphingosine and a free fatty acid, thereby playing an important role in the regulation of bioactive ceramide and sphingosine levels within the cell. ASAH3 functions at an optimal pH of 8.0 and has high specificity for the natural stereoisomer of ceramide with D-erythro-sphingosine, but not D-ribo-phytosphingosine or D-erythro-dihydrosphingosine as a backbone.

REFERENCES

1. Mao, C., et al. 2003. Cloning and characterization of a mouse endoplasmic reticulum alkaline ceramidase: an enzyme that preferentially regulates metabolism of very long chain ceramides. J. Biol. Chem. 278: 31184-31191.
2. Houben, E., et al. 2006. Differentiation-associated expression of ceramidase isoforms in cultured keratinocytes and epidermis. J. Lipid Res. 47: 1063-1070.
3. Houben, E., et al. 2007. Kinetic characteristics of acidic and alkaline ceramidase in human epidermis. Skin Pharmacol. Physiol. 20: 187-194.
4. Mao, C., et al. 2008. Ceramidases: regulators of cellular responses mediated by ceramide, sphingosine, and sphingosine-1-phosphate. Biochim. Biophys. Acta 1781: 424-434.
5. Zeidan, Y.H., et al. 2008. Molecular targeting of acid ceramidase: implications to cancer therapy. Curr. Drug Targets 9: 653-661.
6. Sun, W., et al. 2008. Upregulation of the human alkaline ceramidase 1 and acid ceramidase mediates calcium-induced differentiation of epidermal keratinocytes. J. Invest. Dermatol. 128: 389-397.
7. Kim, S., et al. 2008. Ceramide accelerates ultraviolet (UV)-induced MMP-1 expression through JAK1/Stat-1 pathway in cultured human dermal fibroblasts. J. Lipid Res. 49: 2571-2581.

CHROMOSOMAL LOCATION

Genetic locus: Acer1 (mouse) mapping to 17 D.

PRODUCT

ASAH3 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 ASAH3 shRNA Plasmid (m): sc-141288-SH and ASAH3 shRNA (m) Lentiviral Particles: sc-141288-V as alternate gene silencing products.

For independent verification of ASAH3 (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-141288A, sc-141288B and sc-141288C.

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

ASAH3 siRNA (m) is recommended for the inhibition of ASAH3 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ASAH3 gene expression knockdown using RT-PCR Primer: ASAH3 (m)-PR: sc-141288-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.