SANTA CRUZ BIOTECHNOLOGY, INC.

ASCL3 siRNA (m): sc-141298

BACKGROUND

Members of the myogenic determination family are basic helix-loop-helix (bHLH) proteins that can be separated into two classes, both of which work together to activate DNA transcription. Class A proteins include the ubiquitously expressed E-box binding factors, namely E2A, ITF-2 and HEB, while class B proteins, such as MyoD, myogenin and Neuro D (BETA2), are transiently expressed and exhibit a much more limited tissue distribution. Working in opposition to these positively acting factors are a specialized group of basic helix-loop-helix (bHLH) transcription factors that function as dominant negative regulators and are involved in cell lineage determination and differentiation. ASCL3 (achaete-scute homolog 3), also known as HASH3 or SGN1, is a 180 amino acid protein that localizes to the nucleus and contains one bHLH domain. Expressed in a wide variety of fetal and adult tissues, ASCL3 functions as a transcriptional repressor that inhibits myogenesis and is important for the development and differentiation of numerous tissues.

REFERENCES

1. Ball, D.W., et al. 1993. Identification of a human achaete-scute homolog highly expressed in neuroendocrine tumors. Proc. Natl. Acad. Sci. USA 90: 5648-5652.
2. Amid, C., et al. 2001. Comparative genomic sequencing reveals a strikingly similar architecture of a conserved syntenic region on human chromosome 11p15.3 (including gene ST5) and mouse chromosome 7. Cytogenet. Cell Genet. 93: 284-290.
3. Yoshida, S., et al. 2001. Sgn1, a basic helix-loop-helix transcription factor delineates the salivary gland duct cell lineage in mice. Dev. Biol. 240: 517-530.
4. Jonsson, M., et al. 2004. Hash4, a novel human achaete-scute homologue found in fetal skin. Genomics 84: 859-866.
5. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609154. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Bullard, T., et al. 2008. ASCL3 expression marks a progenitor population of both acinar and ductal cells in mouse salivary glands. Dev. Biol. 320: 72-78.

CHROMOSOMAL LOCATION

Genetic locus: Ascl3 (mouse) mapping to 7 E3.

PRODUCT

ASCL3 siRNA (m) is a target-specific 19-25 nt siRNA 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 ASCL3 shRNA Plasmid (m): sc-141298-SH and ASCL3 shRNA (m) Lentiviral Particles: sc-141298-V as alternate gene silencing products.

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

ASCL3 siRNA (m) is recommended for the inhibition of ASCL3 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 ASCL3 gene expression knockdown using RT-PCR Primer: ASCL3 (m)-PR: sc-141298-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.