SANTA CRUZ BIOTECHNOLOGY, INC.

AMDHD1 siRNA (h): sc-96036

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The Power to Question

BACKGROUND

AMDHD1 (amidohydrolase domain containing 1), also known as probable imidazolonepropionase, is a 426 amino acid protein belonging to the hutI family. AMDHD1 participates in hydrolase activity, acting on carbon-nitrogen bonds, but not peptide bonds, in cyclic amides. AMDHD1 also functions in imidazolonepropionase activity and metal ion binding, whereby binding one iron or zinc ion per subunit. AMDHD1 is encoded by a gene that maps to human chromosome 12, which encodes over 1,100 genes within 132 million bases and makes up approximately 4.5% of the human genome. A number of skeletal deformities are linked to chromosome 12, including hypochondrogenesis, achondrogenesis and Kniest dysplasia. Noonan syndrome, characterized by heart and facial developmental defects, is caused by a mutant form of the PTPN11 gene product, SH-PTP2. Chromosome 12 is also linked to a homeobox gene cluster, which encodes crucial transcription factors for morphogenesis, and the natural killer complex gene cluster that encodes C-type lectin proteins, which mediate the NK cell response to MHC I interaction.

REFERENCES

1. Yang, W., et al. 1998. Low basal transcripts of the COL2A1 collagen gene from lymphoblasts show alternative splicing of exon 12 in the Kniest form of spondyloepiphyseal dysplasia. Hum. Mutat. Suppl 1: S1-S2.
2. Trowsdale, J., et al. 2001. The genomic context of natural killer receptor extended gene families. Immunol. Rev. 181: 20-38.
3. Nishimura, G., et al. 2005. The phenotypic spectrum of COL2A1 mutations. Hum. Mutat. 26: 36-43.
4. Kelley, J., et al. 2005. Comparative genomics of natural killer cell receptor gene clusters. PLoS Genet. 1: 129-139.
5. van der Burgt, I. 2007. Noonan syndrome. Orphanet J. Rare Dis. 2: 4.
6. Yang, T., et al. 2010. Mutation analysis of PTPN11 gene in Noonan syndrome. Zhonghua Yi Xue Yi Chuan Xue Za Zhi 27: 554-558.
7. SWISS-PROT/TrEMBL (Q96NU7). World Wide Web URL: http://www.uniprot.org/uniprot/Q96NU7

CHROMOSOMAL LOCATION

Genetic locus: AMDHD1 (human) mapping to 12q23.1.

PRODUCT

AMDHD1 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 AMDHD1 shRNA Plasmid (h): sc-96036-SH and AMDHD1 shRNA (h) Lentiviral Particles: sc-96036-V as alternate gene silencing products.

For independent verification of AMDHD1 (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-96036A, sc-96036B and sc-96036C.

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

AMDHD1 siRNA (h) is recommended for the inhibition of AMDHD1 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

AMDHD1 (F-3): sc-515501 is recommended as a control antibody for monitoring of AMDHD1 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgM-HRP: sc-2064 (dilution range: 1:500-1:5,000), TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-mouse IgM-FITC: sc-2082 (dilution range: 1:100-1:400) or goat anti-mouse IgM-TR: sc-2983 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor AMDHD1 gene expression knockdown using RT-PCR Primer: AMDHD1 (h)-PR: sc-96036-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.