



AHCYL1 siRNA (h): sc-88017

BACKGROUND

AHCYL1 (S-adenosylhomocysteine hydrolase-like 1), also known as DCAL, IRBIT or PRO233, is an endoplasmic reticulum (ER) protein that is involved in amino acid biosynthesis. Expressed in dendritic blood cells (DCs), AHCYL1 functions to catalyze the H₂O-dependent conversion of S-adenosyl-L-homocysteine to L-homocysteine and adenosine, a reaction that uses NAD as a cofactor. Additionally, AHCYL1 contains a PDZ-binding domain and a PEST region through which it can interact with IP3R-I (inositol 1,4,5-trisphosphate (IP3) receptor-I), a protein involved in various signaling pathways. This interaction lowers the affinity of IP3R-1 for its substrate, IP3, thereby decreasing the rate of IP3-IP3R-I binding. AHCYL1 shares 100% homology with its mouse counterpart, indicating a highly conserved function between species. Two isoforms of AHCYL1 are expressed due to alternative splicing events.

REFERENCES

1. Dekker, J.W., et al. 2002. Identification of an S-adenosylhomocysteine hydrolase-like transcript induced during dendritic cell differentiation. *Immunogenetics* 53: 993-1001.
2. Ando, H., et al. 2003. IRBIT, a novel inositol 1,4,5-trisphosphate (IP3) receptor-binding protein, is released from the IP3 receptor upon IP3 binding to the receptor. *J. Biol. Chem.* 278: 10602-10612.
3. Cooper, B.J., et al. 2006. Suppression and overexpression of adenosylhomocysteine hydrolase-like protein 1 (AHCYL1) influences zebrafish embryo development: a possible role for AHCYL1 in inositol phospholipid signaling. *J. Biol. Chem.* 281: 22471-22484.

CHROMOSOMAL LOCATION

Genetic locus: AHCYL1 (human) mapping to 1p13.3.

PRODUCT

AHCYL1 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 AHCYL1 shRNA Plasmid (h): sc-88017-SH and AHCYL1 shRNA (h) Lentiviral Particles: sc-88017-V as alternate gene silencing products.

For independent verification of AHCYL1 (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-88017A, sc-88017B and sc-88017C.

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

AHCYL1 siRNA (h) is recommended for the inhibition of AHCYL1 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

AHCYL1 (H-1): sc-514560 is recommended as a control antibody for monitoring of AHCYL1 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 AHCYL1 gene expression knockdown using RT-PCR Primer: AHCYL1 (h)-PR: sc-88017-PR (20 µl, 592 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Tao, J., et al. 2022. Bone-targeted bortezomib inhibits bortezomib-resistant multiple myeloma in mice by providing higher levels of bortezomib in bone. *J. Bone Miner. Res.* 37: 629-642.

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.