SANTA CRUZ BIOTECHNOLOGY, INC.

ALDH3B2 siRNA (h): sc-96982

BACKGROUND

Aldehyde dehydrogenases (ALDHs) mediate the $NADP^+$-dependent oxidation of aldehydes into acids and play an important role in the detoxification of alcohol-derived acetaldehyde, as well as in lipid peroxidation and in the metabolism of corticosteroids, biogenic amines and neurotransmitters. ALDH3B2 (aldehyde dehydrogenase 3 family, member B2), also known as ALDH8, is a 385 amino acid protein that belongs to the ALDH family and is involved in the pathway of alcohol metabolism. Expressed in salivary gland tissue, ALDH3B2 functions to catalyze the $NADP^+$-dependent conversion of an aldehyde into an acid. The gene encoding ALDH3B2 maps to human chromosome 11, which houses over 1,400 genes and comprises nearly 4% of the human genome. Jervell and Lange-Nielsen syndrome, Jacobsen syndrome, Niemann-Pick disease, hereditary angioedema and Smith-Lemli-Opitz syndrome are associated with defects in genes that maps to chromosome 11.

REFERENCES

1. Yoshida, A. 1992. Molecular genetics of human aldehyde dehydrogenase. Pharmacogenetics 2: 139-147.
2. Hsu, L.C., Chang, W.C., Lin, S.W. and Yoshida, A. 1995. Cloning and characterization of genes encoding four additional human aldehyde dehydrogenase isozymes. Adv. Exp. Med. Biol. 372: 159-168.
3. Hsu, L.C. and Chang, W.C. 1996. Sequencing and expression of the human ALDH8 encoding a new member of the aldehyde dehydrogenase family. Gene 174: 319-322.
4. Hsu, L.C., Chang, W.C. and Yoshida, A. 1997. Human aldehyde dehydrogenase genes, ALDH7 and ALDH8: genomic organization and gene structure comparison. Gene 189: 89-94.
5. Yoshida, A., Rzhetsky, A., Hsu, L.C. and Chang, C. 1998. Human aldehyde dehydrogenase gene family. Eur. J. Biochem. 251: 549-557.

CHROMOSOMAL LOCATION

Genetic locus: ALDH3B2 (human) mapping to 11q13.2.

PRODUCT

ALDH3B2 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 ALDH3B2 shRNA Plasmid (h): sc-96982-SH and ALDH3B2 shRNA (h) Lentiviral Particles: sc-96982-V as alternate gene silencing products.

For independent verification of ALDH3B2 (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-96982A, sc-96982B and sc-96982C.

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

ALDH3B2 siRNA (h) is recommended for the inhibition of ALDH3B2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ALDH3B2 gene expression knockdown using RT-PCR Primer: ALDH3B2 (h)-PR: sc-96982-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.