



# ALDH3B1 shRNA (m) Lentiviral Particles: sc-141002-V

## BACKGROUND

Aldehyde dehydrogenases (ALDHs) mediate the NADP<sup>+</sup>-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. ALDH3B1 (aldehyde dehydrogenase 3 family, member B1), also known as ALDH4 or ALDH7, is a 468 amino acid protein that belongs to the alcohol dehydrogenase family and is involved in the pathway of ethanol degradation. Expressed at high levels in lung and kidney tissue, ALDH3B1 catalyzes the NADP<sup>+</sup>-dependent conversion of an aldehyde, ethanol, to an acid, acetate, a key reaction in the metabolism of alcohol. Multiple isoforms of ALDH3B1 exist due to alternative splicing events.

## REFERENCES

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2. Hsu, L.C., et al. 1997. Human aldehyde dehydrogenase genes, ALDH7 and ALDH8: genomic organization and gene structure comparison. *Gene* 189: 89-94.
3. Yoshida, A., et al. 1998. Human aldehyde dehydrogenase gene family. *Eur. J. Biochem.* 251: 549-557.
4. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 600466. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Sun, X., et al. 2005. Multi-locus association study of schizophrenia susceptibility genes with a posterior probability method. *Sci. China, C, Life Sci.* 48: 263-269.
6. Marchitti, S.A., et al. 2007. Expression and initial characterization of human ALDH3B1. *Biochem. Biophys. Res. Commun.* 356: 792-798.
7. Wang, Y., et al. 2009. Evidence of epistasis between the catechol-O-methyltransferase and aldehyde dehydrogenase 3B1 genes in paranoid schizophrenia. *Biol. Psychiatry* 65: 1048-1054.

## CHROMOSOMAL LOCATION

Genetic locus: Aldh3b1 (mouse) mapping to 19 A.

## PRODUCT

ALDH3B1 shRNA (m) Lentiviral Particles are concentrated, transduction-ready viral particles containing a target-specific construct that encodes a 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200 µl frozen stock containing  $1.0 \times 10^6$  infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see ALDH3B1 siRNA (m): sc-141002 and ALDH3B1 shRNA Plasmid (m): sc-141002-SH as alternate gene silencing products.

## STORAGE

Store lentiviral particles at -80° C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4° C for up to one week. Avoid repeated freeze thaw cycles.

## APPLICATIONS

ALDH3B1 shRNA (m) Lentiviral Particles is recommended for the inhibition of ALDH3B1 expression in mouse cells.

## SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 µl frozen viral stock containing  $1.0 \times 10^6$  infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ALDH3B1 gene expression knockdown using RT-PCR Primer: ALDH3B1 (m)-PR: sc-141002-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

## RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.