

# NARS2 siRNA (m): sc-149835

## BACKGROUND

NARS2, also known as SLM5 or AsnRS (asparaginyl-tRNA synthetase), is a 477 amino acid mitochondrial matrix protein that belongs to the class-II aminoacyl-tRNA synthetase family. Aminoacyl tRNA synthetases (aaRS) are enzymes that catalyze the esterification of a specific amino acid or its precursor to its compatible cognate tRNA to form an aminoacyl-tRNA. The synthetase first binds ATP and the corresponding amino acid or its precursor to form an aminoacyl-adenylate and release inorganic pyrophosphate (PPi). The adenylate-aaRS complex then binds the appropriate tRNA molecule, and the amino acid is transferred from the aa-AMP to either the 2'- or 3'-OH of the last tRNA base (A76) at the 3'-end. Some synthetases also mediate a proof-reading reaction to ensure high fidelity of tRNA charging; if the tRNA is found to be improperly charged, the aminoacyl-tRNA bond is hydrolyzed. NARS2 acts to attach asparagine residues to its cognate tRNA, and is encoded by a gene that maps to human chromosome 11q14.1.

## REFERENCES

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4. Chuawong, P. and Hendrickson, T.L. 2006. The nondiscriminating aspartyl-tRNA synthetase from *Helicobacter pylori*: anticodon-binding domain mutations that impact tRNA specificity and heterologous toxicity. *Biochemistry* 45: 8079-8087.
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## CHROMOSOMAL LOCATION

Genetic locus: Nars2 (mouse) mapping to 7 E1.

## PROTOCOLS

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

## PRODUCT

NARS2 siRNA (m) 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NARS2 shRNA Plasmid (m): sc-149835-SH and NARS2 shRNA (m) Lentiviral Particles: sc-149835-V as alternate gene silencing products.

For independent verification of NARS2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-149835A, sc-149835B and sc-149835C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

NARS2 siRNA (m) is recommended for the inhibition of NARS2 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  $\mu$ M in 66  $\mu$ l. 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 NARS2 gene expression knockdown using RT-PCR Primer: NARS2 (m)-PR: sc-149835-PR (20  $\mu$ l). 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.