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- Diagnostik & molekulare Diagnostik
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## Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

## Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand


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SANTA CRUZ BIOTECHNOLOGY, INC.

# NFS1 siRNA (m): sc-149946

## BACKGROUND

NFS1 (nitrogen fixation 1), also known as NIFS or IscS (cysteine desulfurase), is a member of the class V pyridoxal-phosphate-dependent aminotransferase family. It localizes to the cytoplasm or mitochondrion depending on which form is generated based on cytosolic pH. Highest expression levels of NFS1 are found in heart and skeletal muscle. Lower levels of expression are also found in liver, brain and pancreas. NFS1 is responsible for catalyzing the removal of sulfur from cysteine to form alanine, thereby supplying the inorganic sulfur for iron-sulfur (Fe-S) clusters. Fe-S clusters function as essential cofactors in a wide variety of events, including facilitation of electron transfer processes in oxidative phosphorylation, catalysis of enzymatic reactions in aconitase and dehydratases and maintenance of structural integrity in the DNA repair enzyme endonuclease III.

## REFERENCES


1. Ouzounis, C., et al. 1993. Homology of the NIFS family of proteins to a new class of pyridoxal phosphate-dependent enzymes. FEBS Lett. 322: 159-164.
2. Beinert, H., et al. 1997 Iron-sulfur clusters: nature's modular, multipurpose structure. Science 277: 653-659.
3. Land, T., et al. 1999. Targeting of a human iron-sulfur cluster assembly enzyme, NIFS, to different subcellular compartments is regulated through alternative AUG utilization. Mol. Cell 2: 807-815.
4. Tong, W.H., et al. 2000. Distinct iron-sulfur cluster assembly complexes exist in the cytosol and mitochondria of human cells. EMBO J. 19: 5692-5700.
5. Olson, J.W., et al. 2001. Characterization of the NIFU and NIFS Fe-S cluster formation proteins essential for viability in *Heliobacter pylori*. Biochemistry 39: 16213-16219.
6. Tong, W.H., et al. 2003. Subcellular compartmentalization of human NFU, an iron-sulfur cluster scaffold protein, and its ability to assemble a [4Fe-4S] cluster. Proc. Natl. Acad. Sci. USA 100: 9762-9767.
7. Li, K., et al. 2006. Roles of the mammalian cytosolic cysteine desulfurase, ISCS, and scaffold protein, ISCU, in iron-sulfur cluster assembly. J. Biol. Chem. 281: 12344-12351.


## CHROMOSOMAL LOCATION

Genetic locus: Nfs1 (mouse) mapping to 2 H1.

## PRODUCT

NFS1 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NFS1 shRNA Plasmid (m): sc-149946-SH and NFS1 shRNA (m) Lentiviral Particles: sc-149946-V as alternate gene silencing products.

For independent verification of NFS1 (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-149946A, sc-149946B and sc-149946C.

## 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

NFS1 siRNA (m) is recommended for the inhibition of NFS1 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 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

NFS1 (B-7): sc-365308 is recommended as a control antibody for monitoring of NFS1 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 NFS1 gene expression knockdown using RT-PCR Primer: NFS1 (m)-PR: sc-149946-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.