SANTA CRUZ BIOTECHNOLOGY, INC.

NFS1 (2635E1a): sc-81107



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

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- Land, T. and Rouault, T.A. 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.
- Tong, W.H. and Rouault, T. 2000. Distinct iron-sulfur cluster assembly complexes exist in the cytosol and mitochondria of human cells. EMBO J. 19: 5692-5700.
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- 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.
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CHROMOSOMAL LOCATION

Genetic locus: NFS1 (human) mapping to 20q11.22.

SOURCE

NFS1 (2635E1a) is a mouse monoclonal antibody raised against a recombinant protein corresponding to a region near the N-terminus of NFS1 of human origin.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PRODUCT

Each vial contains 100 μg lgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 1.0% stabilizer protein.

APPLICATIONS

NFS1 (2635E1a) is recommended for detection of NFS1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for NFS1 siRNA (h): sc-75911, NFS1 shRNA Plasmid (h): sc-75911-SH and NFS1 shRNA (h) Lentiviral Particles: sc-75911-V.

Molecular Weight of NFS1: 50 kDa.

Positive Controls: NFS1 (h2): 293T Lysate: sc-117073, Hep G2 cell lysate: sc-2227 or SK-N-MC cell lysate: sc-2237.

DATA





NFS1 (2635E1a): sc-81107. Western blot analysis of NFS1 expression in non-transfected 293T: sc-117752 (**A**), human NFS1 transfected 293T: sc-117073 (**B**) and SK-N-MC (**C**) whole cell lysates.

NFS1 (2635E1a): sc-81107. Western blot analysis of NFS1 expression in non-transfected 293T: sc-117752 (A), human NFS1 transfected 293T: sc-117073 (B) and Hep G2 (C) whole cell lysates.

SELECT PRODUCT CITATIONS

- Kim, K.S., et al. 2018. Cytosolic HSC 20 integrates *de novo* iron-sulfur cluster biogenesis with the Ciao 1-mediated transfer to recipients. Hum. Mol. Genet. 27: 837-852.
- Maio, N., et al. 2023. An iron-sulfur cluster in the zinc-binding domain of the SARS-CoV-2 helicase modulates its RNA-binding and -unwinding activities. Proc. Natl. Acad. Sci. USA 120: e2303860120.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/ thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.