SANTA CRUZ BIOTECHNOLOGY, INC.

NARS2 (X-24): sc-130876

BACKGROUND

SLM5 (mitochondrial asparaginyl-tRNA synthetase, asparagine-tRNA ligase) is a mitochondrial protein encoded by the human gene NARS2. AsnRS 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 proofreading reaction to ensure high fidelity of tRNA charging; if the tRNA is found to be improperly charged, the aminoacyl-tRNA bond is hydrolyzed. SLM5 acts to attach asparagine residues to its cognate tRNA.

REFERENCES

1. Ramirez, B.L., et al. 2006. Brugia malayi asparaginyl-transfer RNA synthetase induces chemotaxis of human leukocytes and activates G-protein-coupled receptors CXCR1 and CXCR2. J. Infect. Dis. 193: 1164-1171.
2. Sukuru, S.C., et al. 2006. Discovering new classes of *Brugia malayi* asparaginyl-tRNA synthetase inhibitors and relating specificity to conformational change. J. Comput. Aided Mol. Des. 20: 159-178.
3. Iwasaki, W., et al. 2006. Structural basis of the water-assisted asparagine recognition by asparaginyl-tRNA synthetase. J. Mol. Biol. 360: 329-342.
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.
5. Hirakata, M., et al. 2007. Clinical and immunogenetic features of patients with autoantibodies to asparaginyl-transfer RNA synthetase. Arthritis Rheum. 56: 1295-1303.

CHROMOSOMAL LOCATION

Genetic locus: NARS2 (human) mapping to 11q14.1.

SOURCE

NARS2 (X-24) is a purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of NARS2 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

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

APPLICATIONS

NARS2 (X-24) is recommended for detection of NARS2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for NARS2 siRNA (h): sc-96469, NARS2 shRNA Plasmid (h): sc-96469-SH and NARS2 shRNA (h) Lentiviral Particles: sc-96469-V.

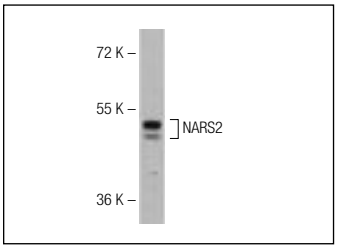
Molecular Weight of NARS2: 54 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



NARS2 (X-24): sc-130876. Western blot analysis of NARS2 expression in HeLa whole cell lysate.

PROTOCOLS

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