

NARS2 (G-20): sc-324315

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 (PP_i). 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. SLM5 acts to attach asparagine residues to its cognate tRNA.

REFERENCES

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- Chuwong, 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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- Sato, Y., et al. 2007. Structure of the nondiscriminating aspartyl-tRNA synthetase from the crenarchaeon *Sulfolobus tokodaii* strain 7 reveals the recognition mechanism for two different tRNA anticodons. *Acta Crystallogr. D Biol. Crystallogr.* 63: 1042-1047.

CHROMOSOMAL LOCATION

Genetic locus: NARS2 (human) mapping to 11q14.1; Nars2 (mouse) mapping to 7 E1.

SOURCE

NARS2 (G-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of NARS2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-324315 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NARS2 (G-20) is recommended for detection of NARS2 of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with AsnRS.

NARS2 (G-20) is also recommended for detection of NARS2 in additional species, including equine and canine.

Suitable for use as control antibody for NARS2 siRNA (h): sc-96469, NARS2 siRNA (m): sc-149835, NARS2 shRNA Plasmid (h): sc-96469-SH, NARS2 shRNA Plasmid (m): sc-149835-SH, NARS2 shRNA (h) Lentiviral Particles: sc-96469-V and NARS2 shRNA (m) Lentiviral Particles: sc-149835-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 donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.

PROTOCOLS

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