

AsnRS (H-300): sc-98546

BACKGROUND

AsnRS (cytoplasmic asparaginyl-tRNA synthetase, asparagine-tRNA ligase) is a cytoplasmic protein encoded by the human gene NARS. 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 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. AsnRS acts to attach asparagine residues to its cognate tRNA. AsnRS autoantibodies have a strong association with interstitial lung disease (ILD) and may be associated with the DR2 phenotype. In bacteria that lack AsnRS, AspRS (aspartyl-tRNA synthetase) acts to generate both Asp-tRNA (Asp) and the noncanonical, misacylated Asp-tRNA (Asn-tRNA).

REFERENCES

- 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.
- 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.
- Iwasaki, W., et al. 2006. Structural basis of the water-assisted asparagine recognition by asparaginyl-tRNA synthetase. *J. Mol. Biol.* 360: 329-342.
- Chuawong, P., et al. 2006. The nondiscriminating aspartyl-tRNA synthetase from *Helicobacter pylori*: anticodon-binding domain mutations that impact tRNA specificity and heterologous toxicity. *Biochemistry* 45: 8079-8087.
- 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: NARS (human) mapping to 18q21.31; Nars (mouse) mapping to 18 E1.

SOURCE

AsnRS (H-300) is a rabbit polyclonal antibody raised against amino acids 1-289 mapping at the N-terminus of AsnRS 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.

STORAGE

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

APPLICATIONS

AsnRS (H-300) is recommended for detection of AsnRS of mouse, rat and 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)], 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).

AsnRS (H-300) is also recommended for detection of AsnRS in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for AsnRS siRNA (h): sc-72565, AsnRS siRNA (m): sc-72566, AsnRS shRNA Plasmid (h): sc-72565-SH, AsnRS shRNA Plasmid (m): sc-72566-SH, AsnRS shRNA (h) Lentiviral Particles: sc-72565-V and AsnRS shRNA (m) Lentiviral Particles: sc-72566-V.

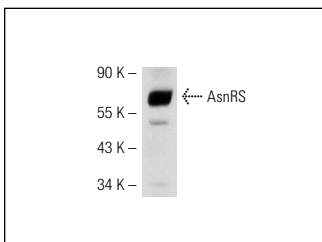
Molecular Weight of AsnRS: 63 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, K-562 whole cell lysate: sc-2203 or mouse liver extract: sc-2256.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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



AsnRS (H-300): sc-98546. Western blot analysis of AsnRS expression in mouse liver tissue extract.

RESEARCH USE

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



Try **AsnRS (G-8): sc-271059** or **AsnRS (A-1): sc-271058**, our highly recommended monoclonal alternatives to AsnRS (H-300).