

AsnRS (E-20): sc-74704

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 (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. 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

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- 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.
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CHROMOSOMAL LOCATION

Genetic locus: NARS (human) mapping to 18q21.31; Nars (mouse) mapping to 18 E1.

SOURCE

AsnRS (E-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of AsnRS of human origin.

STORAGE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-74704 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

AsnRS (E-20) 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), 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 (E-20) is also recommended for detection of AsnRS in additional species, including equine, canine, bovine, porcine 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, Jurkat whole cell lysate: sc-2204 or HT-1080 whole cell lysate: sc-364183.

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.

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.