

IARS2 (E-12): sc-137526

BACKGROUND

The fidelity of protein synthesis requires efficient discrimination of amino acid substrates by aminoacyl-tRNA synthetases. Proteins belonging to this family function to catalyze the aminoacylation of tRNAs by their corresponding amino acids, thus linking amino acids with tRNA-contained nucleotide triplets. IARS2 (isoleucyl-tRNA synthetase), also known as IleRS (isoleucine-tRNA ligase), is a 1,012 amino acid protein that is localized within the mitochondrial matrix. Specifically belonging to the class I mitochondrial amino-acyl-tRNA synthetase family, IARS2 contains a characteristic Rossmann fold, which is found in proteins that typically bind nucleotides. The gene encoding IARS2 maps to human chromosome 1, which is the largest human chromosome spanning about 260 million base pairs and making up 8% of the human genome.

REFERENCES

1. Degoul, F., Brule, H., Cepanec, C., Helm, M., Marsac, C., Leroux, J., Giege, R. and Florentz, C. 1998. Isoleucylation properties of native human mitochondrial tRNA^{Ile} and tRNA^{Ile} transcripts. Implications for cardiomyopathy-related point mutations (4269, 4317) in the tRNA^{Ile} gene. *Hum. Mol. Genet.* 7: 347-354.
2. Bonnefond, L., Fender, A., Rudinger-Thirion, J., Giege, R., Florentz, C. and Sissler, M. 2005. Toward the full set of human mitochondrial aminoacyl-tRNA synthetases: characterization of AspRS and TyrRS. *Biochemistry* 44: 4805-4816.
3. Pelliccia, F., Curatolo, A., Limongi, Z.M., Bosco, N. and Rocchi, A. 2007. Transcriptional profiling of genes at the human common fragile site FRA1H in tumor-derived cell lines. *Cancer Genet. Cytogenet.* 178: 144-150.
4. Salowe, S.P., Wiltsie, J., Hawkins, J.C. and Sonatore, L.M. 2009. The catalytic flexibility of tRNA^{Ile}-lysine synthetase can generate alternative tRNA substrates for isoleucyl-tRNA synthetase. *J. Biol. Chem.* 284: 9656-9662.

CHROMOSOMAL LOCATION

Genetic locus: IARS2 (human) mapping to 1q41; lars2 (mouse) mapping to 1 H5.

SOURCE

IARS2 (E-12) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of IARS2 of human origin.

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-137526 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

IARS2 (E-12) is recommended for detection of IARS2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

IARS2 (E-12) is also recommended for detection of IARS2 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for IARS2 siRNA (h): sc-88313, IARS2 siRNA (m): sc-146128, IARS2 shRNA Plasmid (h): sc-88313-SH, IARS2 shRNA Plasmid (m): sc-146128-SH, IARS2 shRNA (h) Lentiviral Particles: sc-88313-V and IARS2 shRNA (m) Lentiviral Particles: sc-146128-V.

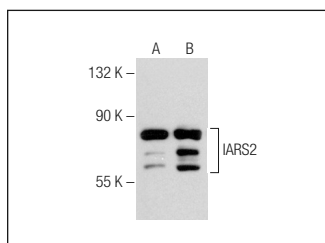
Molecular Weight of IARS2: 114 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203 or IARS2 (h): 293T Lysate: sc-116227.

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



IARS2 (E-12): sc-137526. Western blot analysis of IARS2 expression in non-transfected: sc-117752 (A) and human IARS2 transfected: sc-116227 (B) 293T whole cell lysates.

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.