



IARS2 (h3): 293T Lysate: sc-112283

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 aminoacyl-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 one, which is the largest human chromosome spanning about 260 million base pairs and making up 8% of the human genome.

REFERENCES

1. Degoul, F., et al. 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., et al. 2005. Toward the full set of human mitochondrial aminoacyl-tRNA synthetases: characterization of AspRS and TyrRS. *Biochemistry* 44: 4805-4816.
3. Pelliccia, F., et al. 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., et al. 2009. The catalytic flexibility of tRNA^{Ile}-lysine synthetase can generate alternative tRNA substrates for isoleucyl-tRNA synthetase. *J. Biol. Chem.* 284: 9656-9662.
5. Berglund, A.K., et al. 2009. Defining the determinants for dual targeting of amino acyl-tRNA synthetases to mitochondria and chloroplasts. *J. Mol. Biol.* 393: 803-814.
6. Yu, Z., et al. 2009. Search for primitive *Methanopyrus* based on genetic distance between Val- and Ile-tRNA synthetases. *J. Mol. Evol.* 69: 386-394.
7. Choudhary, C., et al. 2009. Lysine acetylation targets protein complexes and co-regulates major cellular functions. *Science* 325: 834-840.
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CHROMOSOMAL LOCATION

Genetic locus: IARS2 (human) mapping to 1q41.

PRODUCT

IARS2 (h3): 293T Lysate represents a lysate of human IARS2 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

RESEARCH USE

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

APPLICATIONS

IARS2 (h3): 293T Lysate is suitable as a Western Blotting positive control for human reactive IARS2 antibodies. Recommended use: 10-20 µl per lane.

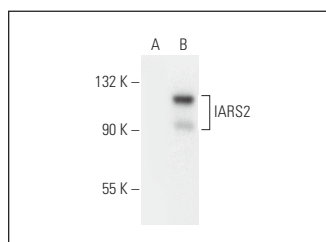
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

IARS2 (E-2): sc-393641 is recommended as a positive control antibody for Western Blot analysis of enhanced human IARS2 expression in IARS2 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

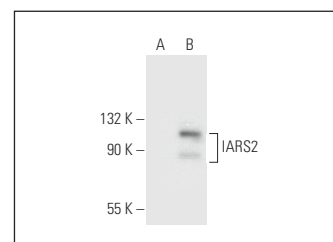
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



IARS2 (E-2): sc-393641. Western blot analysis of IARS2 expression in non-transfected: sc-117752 (A) and human IARS2 transfected: sc-112283 (B) 293T whole cell lysates.



IARS2 (B-1): sc-393654. Western blot analysis of IARS2 expression in non-transfected: sc-117752 (A) and human IARS2 transfected: sc-112283 (B) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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