

DaRS (14S6): sc-100986

BACKGROUND

Aminoacyl-tRNA synthetases consist of a family of enzymes that catalyze the specific aminoacylation of cognate tRNA in the initial step of ribosome-dependent protein biosynthesis. DaRS is part of a multisubunit complex of aminoacyl-tRNA synthetases and is involved in the transfer of Asp-tRNA to EF-1 α 1 (elongation factor α 1). The N-terminus of DaRS in vertebrates is a newly evolved structure that contains a putative amphiphilic helix and is dissimilar between different species. The N-terminal extension acts as a switch that, when in its stretched form, reduces the rate of dissociation of Asp-tRNA from DaRS, thereby providing enough time for EF-1 α 1 to interact with Asp-tRNA. This suggests that the N-terminus of DaRS plays a critical role in its catalytic function. DaRS contains two phosphorylation sites, forms homodimers and localizes to the cytoplasm.

REFERENCES

- Lorber, B., et al. 1988. Properties of N-terminal truncated yeast aspartyl-tRNA synthetase and structural characteristics of the cleaved domain. *Eur. J. Biochem.* 174: 155-161.
- Jacobo-Molina, A., et al. 1989. cDNA sequence, predicted primary structure, and evolving amphiphilic helix of human aspartyl-tRNA synthetase. *J. Biol. Chem.* 264: 16608-16612.
- Mirande, M., et al. 1992. Engineering mammalian aspartyl-tRNA synthetase to probe structural features mediating its association with the multisynthetase complex. *Eur. J. Biochem.* 203: 459-466.
- Escalante, C. and Yang, D.C. 1993. Expression of human aspartyl-tRNA synthetase in *Escherichia coli*. Functional analysis of the N-terminal putative amphiphilic helix. *J. Biol. Chem.* 268: 6014-6023.
- Agou, F. and Mirande, M. 1997. Aspartyl-tRNA synthetase from rat: *in vitro* functional analysis of its assembly into the multisynthetase complex. *Eur. J. Biochem.* 243: 259-267.

CHROMOSOMAL LOCATION

Genetic locus: DARS (human) mapping to 2q21.3; Dars (mouse) mapping to 1 E4.

SOURCE

DaRS (14S6) is a mouse monoclonal antibody raised against recombinant DaRS of human origin.

PRODUCT

Each vial contains 100 μ g IgG_{2a} kappa light chain in 1.0 ml 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.

PROTOCOLS

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

APPLICATIONS

DaRS (14S6) is recommended for detection of DaRS of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for DaRS siRNA (h): sc-94475, DaRS siRNA (m): sc-142877, DaRS shRNA Plasmid (h): sc-94475-SH, DaRS shRNA Plasmid (m): sc-142877-SH, DaRS shRNA (h) Lentiviral Particles: sc-94475-V and DaRS shRNA (m) Lentiviral Particles: sc-142877-V.

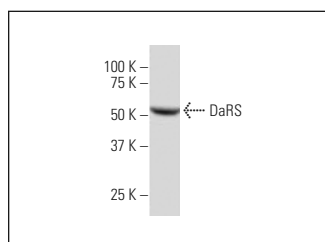
Molecular Weight of DaRS: 57 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

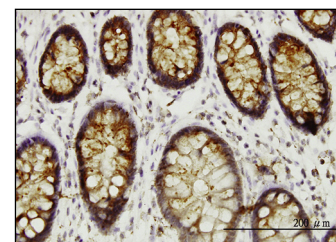
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



DaRS (14S6): sc-100986. Western blot analysis of DaRS expression in HeLa whole cell lysate.



DaRS (14S6): sc-100986. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human colon tissue showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Kumar, D.M., et al. 2013. Temozolomide-modulated glioma proteome: role of interleukin-1 receptor-associated kinase-4 (IRAK4) in chemosensitivity. *Proteomics* 2113-2124.

RESEARCH USE

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