

# DaRS (H-298): sc-366018

## 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  $\alpha$ 1 (elongation factor  $\alpha$ 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  $\alpha$ 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

1. 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.
2. 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.
3. 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.
4. Escalante, C., et al. 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.
5. Agou, F., et al. 1997. Aspartyl-tRNA synthetase from rat: *in vitro* functional analysis of its assembly into the multisynthetase complex. *Eur. J. Biochem.* 243: 259-267.
6. Sang Lee, J., et al. 2002. Interaction network of human aminoacyl-tRNA synthetases and subunits of elongation factor 1 complex. *Biochem. Biophys. Res. Commun.* 291: 158-164.

## CHROMOSOMAL LOCATION

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

## SOURCE

DaRS (H-298) is a rabbit polyclonal antibody raised against amino acids 170-467 mapping within an internal region of DaRS of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g 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

DaRS (H-298) 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  $\mu$ g per 100-500  $\mu$ g 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).

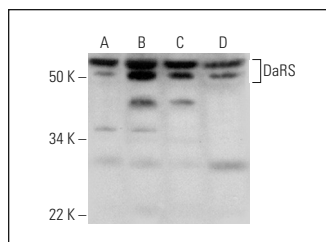
DaRS (H-298) is also recommended for detection of DaRS in additional species, including equine, canine, bovine, porcine and avian.

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.

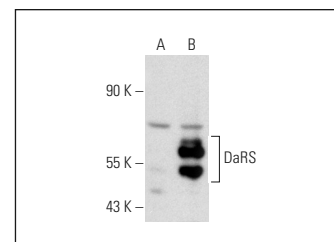
Molecular Weight of DaRS: 57 kDa.

Positive Controls: DaRS (h): 293T Lysate: sc-159660, Jurkat whole cell lysate: sc-2204 or HL-60 whole cell lysate: sc-2209.

## DATA



DaRS (H-298): sc-366018. Western blot analysis of DaRS expression in HL-60 (A), K-562 (B), Jurkat (C) and RT-4 (D) whole cell lysates.



DaRS (H-298): sc-366018. Western blot analysis of DaRS expression in non-transfected: sc-117752 (A) and human DaRS transfected: sc-159660 (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](http://www.scbt.com) for detailed protocols and support products.



Try **DaRS (H-3): sc-393275** or **DaRS (14S6): sc-100986**, our highly recommended monoclonal alternatives to DaRS (H-298).