

# Cytoplasmic CysRS (C-15): sc-79224

## BACKGROUND

Aminoacyl-tRNA synthetases consist of a family of enzymes that catalyze the specific aminoacylation of tRNA by their cognate amino acid in the initial step of ribosome-dependent protein biosynthesis. Cytoplasmic CysRS (cysteinyl-tRNA synthetase, cytoplasmic), also known as CARS, is a 748 amino acid member of the class-I aminoacyl-tRNA synthetase protein family. Cytoplasmic CysRS is a monomeric protein that binds one zinc ion per subunit for use as a cofactor. Cytoplasmic CysRS uses ATP to convert L-cysteine and tRNA(Cys) into ADP, a diphosphate and L-cysteinyl-tRNA(Cys). A chromosomal aberration of the gene that encodes Cytoplasmic CysRS is associated with inflammatory myofibroblastic tumors (IMTs). Cytoplasmic CysRS is expressed as two isoforms produced by alternative splicing events.

## REFERENCES

1. Cruzen, M.E., et al. 1993. Assignment of the cysteinyl-tRNA synthetase gene (CARS) to 11p15.5. *Genomics* 15: 692-693.
2. Kim, J.E., et al. 2000. An elongation factor-associating domain is inserted into human cysteinyl-tRNA synthetase by alternative splicing. *Nucleic Acids Res.* 28: 2866-2872.
3. Davidson, E., et al. 2001. Isolation of two cDNAs encoding functional human cytoplasmic cysteinyl-tRNA synthetase. *Biol. Chem.* 382: 399-406.
4. Cools, J., et al. 2002. Identification of novel fusion partners of ALK, the anaplastic lymphoma kinase, in anaplastic large-cell lymphoma and inflammatory myofibroblastic tumor. *Genes Chromosomes Cancer* 34: 354-362.
5. Rush, J., et al. 2005. Immunoaffinity profiling of tyrosine phosphorylation in cancer cells. *Nat. Biotechnol.* 23: 94-101.
6. Evilia, C., et al. 2006. Acquisition of an insertion peptide for efficient aminoacylation by a halophile tRNA synthetase. *Biochemistry* 45: 6835-6845.

## CHROMOSOMAL LOCATION

Genetic locus: CARS (human) mapping to 11p15.4; Cars (mouse) mapping to 7 F5.

## SOURCE

Cytoplasmic CysRS (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Cytoplasmic CysRS of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-79224 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

Cytoplasmic CysRS (C-15) is recommended for detection of Cytoplasmic CysRS of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

Cytoplasmic CysRS (C-15) is also recommended for detection of Cytoplasmic CysRS in additional species, including equine, canine, bovine, porcine and avian.

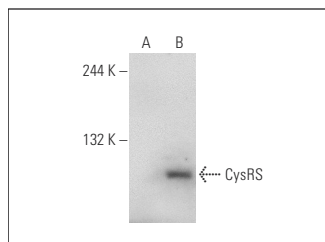
Suitable for use as control antibody for Cytoplasmic CysRS siRNA (h): sc-77084, Cytoplasmic CysRS siRNA (m): sc-77085, Cytoplasmic CysRS shRNA Plasmid (h): sc-77084-SH, Cytoplasmic CysRS shRNA Plasmid (m): sc-77085-SH, Cytoplasmic CysRS shRNA (h) Lentiviral Particles: sc-77084-V and Cytoplasmic CysRS shRNA (m) Lentiviral Particles: sc-77085-V.

Molecular Weight (predicted) of Cytoplasmic CysRS: 85 kDa.

Molecular Weight (observed) of Cytoplasmic CysRS: 109 kDa.

Positive Controls: CysRS (h): 293T Lysate: sc-159661 or HeLa whole cell lysate: sc-2200.

## DATA



Cytoplasmic CysRS (C-15): sc-79224. Western blot analysis of CysRS expression in non-transfected: sc-117752 (A) and human CysRS transfected: sc-159661 (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) or our catalog for detailed protocols and support products.

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Try **Cytoplasmic CysRS (A-3): sc-390230**, our highly recommended monoclonal alternative to Cytoplasmic CysRS (C-15).