SANTA CRUZ BIOTECHNOLOGY, INC.

Cytoplasmic CysRS (H-60): sc-292476

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. and Hou, Y.M. 2006. Acquisition of an insertion peptide for efficient aminoacylation by a halophile tRNA synthetase. Biochemistry 45: 6835-6845.
7. Hohn, M.J., et al. 2006. Emergence of the universal genetic code imprinted in an RNA record. Proc. Natl. Acad. Sci. USA 103: 18095-18100.

CHROMOSOMAL LOCATION

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

SOURCE

Cytoplasmic CysRS (H-60) is a rabbit polyclonal antibody raised against amino acids 424-483 mapping near the C-terminus 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.

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 (H-60) 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 (H-60) 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.

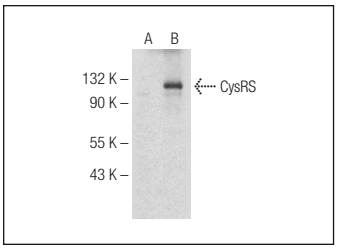
Molecular Weight (observed) of Cytoplasmic CysRS: 109 kDa.

Positive Controls: CysRS (h): 293T Lysate: sc-159661.

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



Cytoplasmic CysRS (H-60): sc-292476. 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.