SANTA CRUZ BIOTECHNOLOGY, INC.

Cytoplasmic CysRS (A-3): sc-390230

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.

CHROMOSOMAL LOCATION

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

SOURCE

Cytoplasmic CysRS (A-3) is a mouse monoclonal 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_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Cytoplasmic CysRS (A-3) is available conjugated to agarose (sc-390230 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390230 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390230 PE), fluorescein (sc-390230 FITC), Alexa Fluor® 488 (sc-390230 AF488), Alexa Fluor® 546 (sc-390230 AF546), Alexa Fluor® 594 (sc-390230 AF594) or Alexa Fluor® 647 (sc-390230 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390230 AF680) or Alexa Fluor® 790 (sc-390230 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Cytoplasmic CysRS (A-3) is recommended for detection of Cytoplasmic CysRS of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

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.

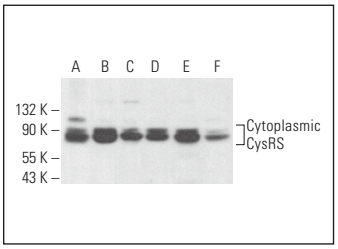
Molecular Weight (observed) of Cytoplasmic CysRS: 109 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, F9 cell lysate: sc-2245 or IMR-32 cell lysate: sc-2409.

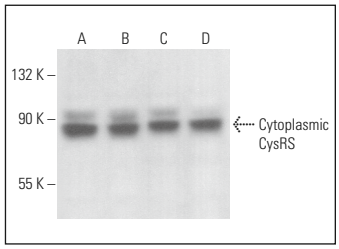
RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Cytoplasmic CysRS (A-3): sc-390230. Western blot analysis of Cytoplasmic CysRS expression in U266 (**A**), F9 (**B**), A-10 (**C**), NIH/3T3 (**D**), RAW 264.7 (**E**) and BXPC-3 (**F**) whole cell lysates.



Cytoplasmic CysRS (A-3): sc-390230. Western blot analysis of Cytoplasmic CysRS expression in HeLa (**A**), IMR-32 (**B**), A-673 (**C**) and Hep G2 (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Kuo, M.E., et al. 2019. Cysteinyl-tRNA synthetase mutations cause a multi-system, recessive disease that includes microcephaly, developmental delay, and brittle hair and nails. Am. J. Hum. Genet. 104: 520-529.
2. Qi, X.H., et al. 2024. Increased cysteinyl-tRNA synthetase drives neuroinflammation in Alzheimer's disease. Transl. Neurodegener. 13: 3.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

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

PROTOCOLS

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