SANTA CRUZ BIOTECHNOLOGY, INC.

SerRSmt (C-11): sc-514991

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The fidelity of protein synthesis requires efficient discrimination of amino acid substrates by aminoacyl-tRNA synthetases. Aminoacyl-tRNA synthetases function to catalyze the aminoacylation of tRNAs by their corresponding amino acids, thus linking amino acids with tRNA-contained nucleotide triplets. SerRSmt (seryl-tRNA synthetase, mitochondrial), also known as SARS2 or SARSM, is a 518 amino acid member of the class-II aminoacyl-tRNA synthetase family that catalyzes the $tRNA^{Ser}$-serine aminoacylation reaction. Localized to the mitochondria, SerRSmt exists as a homodimer and contains a core catalytic domain and a tRNA-binding domain. SerRSmt catalyzes the attachment of serine to $tRNA^{Ser}$ and is also able to aminoacylate $tRNA^{Sec}$ with serine, to form the misacylated tRNA L-seryl-$tRNA^{Sec}$. Via this interaction, SerRSmt is implicated in selenocysteine (Sec) biosynthesis.

REFERENCES

1. Miseta, A., et al. 1991. Mammalian seryl-tRNA synthetase associates with mRNA *in vivo* and has homology to elongation factor 1α. J. Biol. Chem. 266: 19158-19161.
2. Wu, X.Q. and Gross, H.J. 1993. The long extra arms of human $tRNA^{(Ser)Sec}$ and $tRNA^{Ser}$ function as major identify elements for serylation in an orientation-dependent, but not sequence-specific manner. Nucleic Acids Res. 21: 5589-5594.
3. Vincent, C., et al. 1997. Genomic organization, cDNA sequence, bacterial expression, and purification of human seryl-tRNA synthase. Eur. J. Biochem. 250: 77-84.
4. Heckl, M., et al. 1998. Minimal $tRNA^{Ser}$ and $tRNA^{Sec}$ substrates for human seryl-tRNA synthetase: contribution of tRNA domains to serylation and tertiary structure. FEBS Lett. 427: 315-319.

CHROMOSOMAL LOCATION

Genetic locus: SARS2 (human) mapping to 19q13.2; Sars2 (mouse) mapping to 7 A3.

SOURCE

SerRSmt (C-11) is a mouse monoclonal antibody raised against amino acids 144-423 mapping within an internal region of SerRSmt of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SerRSmt (C-11) is available conjugated to agarose (sc-514991 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-514991 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514991 PE), fluorescein (sc-514991 FITC), Alexa Fluor® 488 (sc-514991 AF488), Alexa Fluor® 546 (sc-514991 AF546), Alexa Fluor® 594 (sc-514991 AF594) or Alexa Fluor® 647 (sc-514991 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514991 AF680) or Alexa Fluor® 790 (sc-514991 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

SerRSmt (C-11) is recommended for detection of SerRSmt 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 SerRSmt siRNA (h): sc-97305, SerRSmt siRNA (m): sc-153376, SerRSmt shRNA Plasmid (h): sc-97305-SH, SerRSmt shRNA Plasmid (m): sc-153376-SH, SerRSmt shRNA (h) Lentiviral Particles: sc-97305-V and SerRSmt shRNA (m) Lentiviral Particles: sc-153376-V.

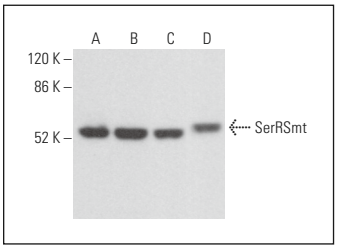
Molecular Weight of SerRSmt: 58 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HeLa whole cell lysate: sc-2200 or U-87 MG cell lysate: sc-2411.

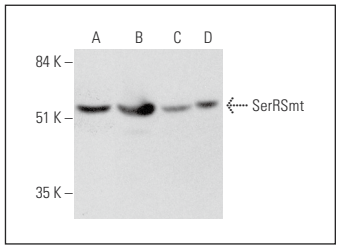
RECOMMENDED SUPPORT REAGENTS

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



SerRSmt (C-11): sc-514991. Western blot analysis of SerRSmt expression in HeLa (**A**), Jurkat (**B**), JAR (**C**) and NIH/3T3 (**D**) whole cell lysates.



SerRSmt (C-11): sc-514991. Western blot analysis of SerRSmt expression in HeLa (**A**), Hep G2 (**B**) and U-87 MG (**C**) whole cell lysates and human liver tissue extract (**D**).

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.