

# SerRSmt (L-14): sc-240862

## 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<sup>Ser</sup>-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

- Miseta, A., et al. 1991. Mammalian seryl-tRNA synthetase associates with mRNA *in vivo* and has homology to elongation factor 1  $\alpha$ . J. Biol. Chem. 266: 19158-19161.
- Wu, X.Q., et al. 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.
- Vincent, C., et al. 1997. Genomic organization, cDNA sequence, bacterial expression, and purification of human seryl-tRNA synthase. Eur. J. Biochem. 250: 77-84.
- 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.
- Yokogawa, T., et al. 2000. Characterization and tRNA recognition of mammalian mitochondrial seryl-tRNA synthetase. J. Biol. Chem. 275: 19913-19920.

## CHROMOSOMAL LOCATION

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

## SOURCE

SerRSmt (L-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of SerRSmt 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.

Blocking peptide available for competition studies, sc-240862 P, (100  $\mu$ g 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

SerRSmt (L-14) is recommended for detection of SerRSmt 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).

SerRSmt (L-14) is also recommended for detection of SerRSmt in additional species, including equine, canine and bovine.

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: HuT 78 whole cell lysate: sc-2208 or Jurkat whole cell lysate: sc-2204.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



SerRSmt (L-14): sc-240862. Western blot analysis of SerRSmt expression in Jurkat (A) and HUT 78 (B) 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.