

SerRS (C-2): sc-271032

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. SerRS (seryl-tRNA synthetase), also known as SERS or SARS, is a 514 amino acid member of the class-II aminoacyl-tRNA synthetase family that catalyzes the tRNA^{Ser}-serine aminoacylation reaction. Localized to the cytoplasm, SerRS exists as a homodimer and contains a core catalytic domain and a tRNA-binding domain. In addition to recognizing and seryllating tRNA^{Ser}, SerRS can also recognize and serylate tRNA^{Sec} (tRNA^{Ser}-selenocysteine). Via this interaction, SerRS 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 α . *J. Biol. Chem.* 266: 19158-19161.
- 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.
- 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.

CHROMOSOMAL LOCATION

Genetic locus: SARS (human) mapping to 1p13.3; Sars (mouse) mapping to 3 F3.

SOURCE

SerRS (C-2) is a mouse monoclonal antibody raised against amino acids 57-355 mapping within an internal region of SerRS of human origin.

PRODUCT

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

SerRS (C-2) is available conjugated to agarose (sc-271032 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271032 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271032 PE), fluorescein (sc-271032 FITC), Alexa Fluor[®] 488 (sc-271032 AF488), Alexa Fluor[®] 546 (sc-271032 AF546), Alexa Fluor[®] 594 (sc-271032 AF594) or Alexa Fluor[®] 647 (sc-271032 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-271032 AF680) or Alexa Fluor[®] 790 (sc-271032 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

SerRS (C-2) is recommended for detection of SerRS of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ 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).

Suitable for use as control antibody for SerRS siRNA (h): sc-76480, SerRS siRNA (m): sc-76481, SerRS shRNA Plasmid (h): sc-76480-SH, SerRS shRNA Plasmid (m): sc-76481-SH, SerRS shRNA (h) Lentiviral Particles: sc-76480-V and SerRS shRNA (m) Lentiviral Particles: sc-76481-V.

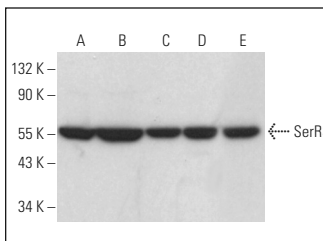
Molecular Weight of SerRS: 59 kDa.

Positive Controls: DU 145 cell lysate: sc-2268, PC-3 cell lysate: sc-2220 or K-562 whole cell lysate: sc-2203.

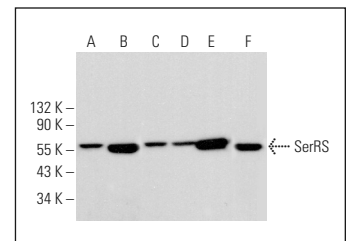
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



SerRS (C-2): sc-271032. Western blot analysis of SerRS expression in K-562 (A), U-87 MG (B), PC-3 (C) and c4 (D) whole cell lysates and rat heart tissue extract (E).



SerRS (C-2): sc-271032. Western blot analysis of SerRS expression in HEL 92.1.7 (A), DU 145 (B), Hep G2 (C), L6 (D) and A-10 (E) whole cell lysates and rat testis tissue extract (F).

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.