

SLA/LP (E-12): sc-131782

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. SLA/LP (soluble liver antigen/liver-pancreas antigen), also known as SEPSECS (Sep (O-phosphoserine) tRNA:Sec (selenocysteine) tRNA synthase) or SLA-p35, is a 501 amino acid cytoplasmic protein that belongs to a diverse family of pyridoxal phosphate-dependent enzymes. Expressed predominantly in liver, lung, kidney and pancreas, SLA/LP plays a role in aminoacyl-tRNA synthesis and, more specifically, selenoprotein biosynthesis. Using PLP as a cofactor, SLA/LP specifically converts O-phosphoseryl-tRNA(Sec) to Sec-tRNA(Sec) by exchanging the phosphate group for a selenol moiety. Due to alternative splicing events, two SLA/LP isoforms exist.

REFERENCES

- Costa, M., et al. 2000. Isolation and characterization of cDNA encoding the antigenic protein of the human tRNP(Ser)Sec complex recognized by autoantibodies from patients with type-1 autoimmune hepatitis. *Clin. Exp. Immunol.* 121: 364-374.
- Volkman, M., et al. 2001. Soluble liver antigen: isolation of a 35 kDa recombinant protein (SLA p35) specifically recognizing sera from patients with autoimmune hepatitis. *Hepatology* 33: 591-596.
- Xu, X.M., et al. 2005. Evidence for direct roles of two additional factors, Secp43 and soluble liver antigen, in the selenoprotein synthesis machinery. *J. Biol. Chem.* 280: 41568-41575.
- Yuan, J., et al. 2006. RNA-dependent conversion of phosphoserine forms selenocysteine in eukaryotes and archaea. *Proc. Natl. Acad. Sci. USA* 103: 18923-18927.
- Xu, X.M., et al. 2007. Biosynthesis of selenocysteine on its tRNA in eukaryotes. *PLoS Biol.* 5: e4.

CHROMOSOMAL LOCATION

Genetic locus: SEPSECS (human) mapping to 4p15.2; Sepsecs (mouse) mapping to 5 C1.

SOURCE

SLA/LP (E-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SLA/LP 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.

Blocking peptide available for competition studies, sc-131782 P, (100 µg 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

SLA/LP (E-12) is recommended for detection of SLA/LP isoforms 1 and 2 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).

SLA/LP (E-12) is also recommended for detection of SLA/LP isoforms 1 and 2 in additional species, including equine, canine and porcine.

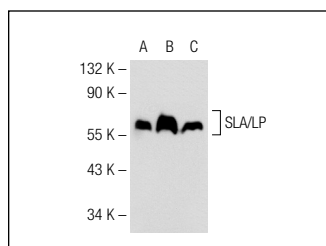
Suitable for use as control antibody for SLA/LP siRNA (h): sc-89108, SLA/LP siRNA (m): sc-153479, SLA/LP shRNA Plasmid (h): sc-89108-SH, SLA/LP shRNA Plasmid (m): sc-153479-SH, SLA/LP shRNA (h) Lentiviral Particles: sc-89108-V and SLA/LP shRNA (m) Lentiviral Particles: sc-153479-V.

Molecular Weight of SLA/LP: 56 kDa.

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



SLA/LP (E-12): sc-131782. Western blot analysis of SLA/LP expression in non-transfected 293T: sc-117752 (A), human SLA/LP transfected 293T: sc-177926 (B) and Jurkat (C) whole cell lysates.

RESEARCH USE

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

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Try **SLA/LP (E-11): sc-514729**, our highly recommended monoclonal alternative to SLA/LP (E-12).