

LysRS (F-25): sc-130806

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. LysRS (lysyl-tRNA synthetase), also known as KARS, KRS or KARS2, exists as both mitochondrial and cytoplasmic isoforms (625 and 576 amino acids, respectively) that belong to the tRNA synthetase family and are thought to play a role in autoimmune diseases, such as polymyositis or dermatomyositis. The gene encoding LysRS maps to human chromosome 16, which encodes over 900 genes and comprises nearly 3% of the human genome.

REFERENCES

1. Targoff, I.N., et al. 1993. Reaction of anti-OJ autoantibodies with components of the multi-enzyme complex of aminoacyl-tRNA synthetases in addition to isoleucyl-tRNA synthetase. *J. Clin. Invest.* 91: 2556-2564.
2. Nichols, R.C., et al. 1996. Assignment of two human autoantigen genes- isoleucyl-tRNA synthetase locates to 9q21 and lysyl-tRNA synthetase locates to 16q23-q24. *Genomics* 36: 210-213.
3. Tolkunova, E., et al. 2000. The human lysyl-tRNA synthetase gene encodes both the cytoplasmic and mitochondrial enzymes by means of an unusual alternative splicing of the primary transcript. *J. Biol. Chem.* 275: 35063-35069.
4. Maas, S., et al. 2001. Genomic clustering of tRNA-specific adenosine deaminase ADAT1 and two tRNA synthetases. *Mamm. Genome.* 12: 387-393.
5. Park, S.G., et al. 2005. Human lysyl-tRNA synthetase is secreted to trigger proinflammatory response. *Proc. Natl. Acad. Sci. USA* 102: 6356-6361.
6. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 601421. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. Kawamata, H., et al. 2008. Lysyl-tRNA synthetase is a target for mutant SOD-1 toxicity in mitochondria. *J. Biol. Chem.* 283: 28321-28328.

CHROMOSOMAL LOCATION

Genetic locus: KARS (human) mapping to 16q23.1.

SOURCE

LysRS (F-25) is a purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of LysRS of human origin.

STORAGE

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

PROTOCOLS

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

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

LysRS (F-25) is recommended for detection of LysRS of 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), immunohistochemistry (including paraffin-embedded sections) (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 LysRS siRNA (h): sc-75718, LysRS shRNA Plasmid (h): sc-75718-SH and LysRS shRNA (h) Lentiviral Particles: sc-75718-V.

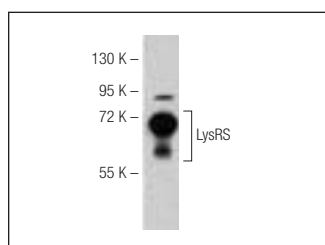
Molecular Weight of LysRS: 68 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or Hep G2 cell lysate: sc-2227.

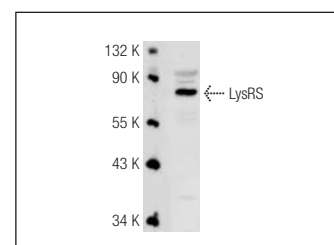
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



LysRS (F-25): sc-130806. Western blot analysis of LysRS expression in Jurkat whole cell lysate.



LysRS (F-25): sc-130806. Western blot analysis of LysRS expression in HeLa whole cell lysate.

RESEARCH USE

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