SANTA CRUZ BIOTECHNOLOGY, INC.

FARSLA (L-8): sc-100987

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Aminoacyl-tRNA synthetases consist of a family of enzymes that catalyze the specific aminoacylation of tRNA by their cognate amino acid in the initial step of ribosome-dependent protein biosynthesis. FARSLA, also known as FRSA, CML33, FARSL or PheHA (phenylalanyl-tRNA synthetase, α subunit), is a member of the class-II aminoacyl-tRNA synthetase family and is highly expressed in proliferating cells of bone marrow. FARSLA is a cytoplasmic phenylalanine-tRNA synthetase that functions as a heterodimer consisting of a catalytic α-subunit and a regulatory β-subunit. The α-subunit is responsible for forming the amino acid binding pocket, mediating the ATP/aminoacyl adenylate binding, and interacts with the acceptor stem of the tRNA. FARSLA functions in a cell cycle-dependent and differentiation-dependent manner.

REFERENCES

1. Ibba, M., et al. 1995. Increased rates of tRNA charging through modification of the enzyme-aminoacyl-adenylate complex of phenylalanyl-tRNA synthetase. FEBS Lett. 358: 293-296.
2. Aphasizhev, R., et al. 1996. Conservation in evolution for a small monomeric phenylalanyl-tRNA synthetase of the $tRNA^{Phe}$ recognition nucleotides and initial aminoacylation site. Biochemistry 35: 117-123.
3. Sen, S., et al. 1997. Expression of a gene encoding a tRNA synthetase-like protein is enhanced in tumorigenic human myeloid leukemia cells and is cell cycle stage- and differentiation-dependent. Proc. Natl. Acad. Sci. USA 94: 6164-6169.
4. Zhou, X., et al. 1999. Cloning of the cDNA encoding phenylalanyl tRNA synthetase regulatory α-subunit-like protein whose expression is down-regulated during differentiation. Gene 233: 13-19.
5. Rodova, M., et al. 1999. Human phenylalanyl-tRNA synthetase: cloning, characterization of the deduced amino acid sequences in terms of the structural domains and coordinately regulated expression of the α and β subunits in chronic myeloid leukemia cells. Biochem. Biophys. Res. Commun. 255: 765-773.
6. Moor, N., et al. 2002. Cloning and expression of human phenylalanyl-tRNA synthetase in *Escherichia coli:* comparative study of purified recombinant enzymes. Protein Expr. Purif. 24: 260-267.
7. Moor, N., et al. 2003. Prokaryotic and eukaryotic tetrameric phenylalanyl-tRNA synthetases display conservation of the binding mode of the $tRNA^{Phe}$ CCA end. Biochemistry 42: 10697-10708.
8. Roy, H., et al. 2006. Phenylalanyl-tRNA synthetase contains a dispensable RNA-binding domain that contributes to the editing of noncognate aminoacyl-tRNA. Biochemistry 45: 9156-9162.

CHROMOSOMAL LOCATION

Genetic locus: FARSA (human) mapping to 19p13.13.

SOURCE

FARSLA (L-8) is a mouse monoclonal antibody raised against recombinant FARSLA of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

FARSLA (L-8) is recommended for detection of FARSLA 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for FARSLA siRNA (h): sc-97718, FARSLA shRNA Plasmid (h): sc-97718-SH and FARSLA shRNA (h) Lentiviral Particles: sc-97718-V.

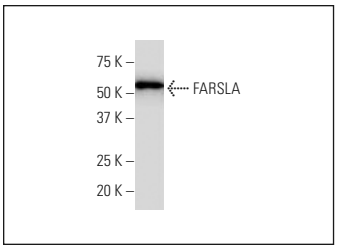
Molecular Weight of FARSLA: 55 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206.

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).

DATA



FARSLA (L-8): sc-100987. Western blot analysis of FARSLA expression in MCF7 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Zhou, Q., et al. 2022. Phenylalanine impairs Insulin signaling and inhibits glucose uptake through modification of IRβ. Nat. Commun. 13: 4291.

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.