

FARSLB (J-02): sc-100985

BACKGROUND

Aminoacyl-tRNA synthetases are a class of enzymes that add specific amino acid residues to various tRNAs. FARSLB (phenylalanine-tRNA ligase β chain), also known as FARSB, FRSB, PheHB or PheRS, is a 589 amino acid cytoplasmic protein that is the regulatory β subunit of phenylalanine-tRNA synthetase. A highly conserved member of the aminoacyl-tRNA synthetase class IIc subfamily, FARSLB functions to enzymatically attach L-phenylalanine residues to terminal adenosines on tRNA^{Phe}. This is an ATP-dependent reaction that yields AMP, a diphosphate and an L-phenylalanine-tagged tRNA^{Phe}. FARSLB is expressed in brain, heart, kidney, pancreas, placenta and skeletal muscle and its expression is increased in malignant cell lines, suggesting a possible role for FARSLB in carcinogenesis.

REFERENCES

1. Sen, S., Zhou, H., Ripmaster, T., Hittelman, W.N., Schimmel, P. and White, R.A. 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.
2. Zhou, X., Richon, V.M., Ngo, L., Rifkind, R.A. and Marks, P.A. 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.
3. Rodova, M., Ankilova, V. and Saftro, M.G. 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.
4. Moor, N., Linshiz, G. and Saftro, M. 2002. Cloning and expression of human phenylalanyl-tRNA synthetase in *Escherichia coli*: comparative study of purified recombinant enzymes. *Protein Expr. Purif.* 24: 260-267.
5. Moor, N., Lavrik, O., Favre, A. and Saftro, M. 2003. Prokaryotic and eukaryotic tetrameric phenylalanyl-tRNA synthetases display conservation of the binding mode of the tRNA^{Phe} CCA end. *Biochemistry* 42: 10697-10708.
6. Yu, X.Y., Finn, J., Hill, J.M., Wang, Z.G., Keith, D., Silverman, J. and Oliver, N. 2004. A series of spirocyclic analogues as potent inhibitors of bacterial phenylalanyl-tRNA synthetases. *Bioorg. Med. Chem. Lett.* 14: 1339-1342.

CHROMOSOMAL LOCATION

Genetic locus: FARSB (human) mapping to 2q36.1.

SOURCE

FARSLB (J-02) is a mouse monoclonal antibody raised against recombinant FARSLB of human origin.

PRODUCT

Each vial contains 100 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

FARSLB (J-02) is recommended for detection of FARSLB of human origin by Western Blotting (starting dilution 1:200, 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), 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 FARSLB siRNA (h): sc-94531, FARSLB shRNA Plasmid (h): sc-94531-SH and FARSLB shRNA (h) Lentiviral Particles: sc-94531-V.

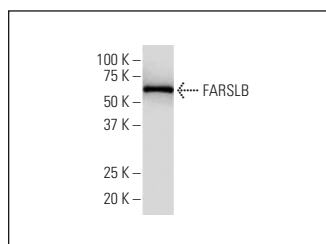
Molecular Weight of FARSLB: 66 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

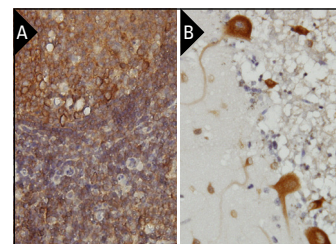
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



FARSLB (J-02): sc-100985. Western blot analysis of FARSLB expression in Hep G2 whole cell lysate.



FARSLB (J-02): sc-100985. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human tonsil tissue showing membrane and cytoplasmic localization (A). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human tonsil tissue showing membrane and cytoplasmic localization (B).

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.