SANTA CRUZ BIOTECHNOLOGY, INC.

ProRS (C-16): sc-74860

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. ProRS (prolyl-tRNA synthetase), also known as EPRS, EARS, PARS, QARS, QPRS, PIG32 or GLUPRORS, is a 1,512 amino acid protein that contains three WHEP-TRS domains and belongs to both the class-I and class-II aminoacyl-tRNA synthetase family. Functioning as a component of the multisynthase complex, ProRS uses ATP to catalyze the conversion of L-glutamate and $tRNA^{Glu}$ to L-glutamyl-$tRNA^{Glu}$, as well as the conversion of L-proline and $tRNA^{Pro}$ to L-prolyl-$tRNA^{Pro}$.

REFERENCES

1. Kunze, N., et al. 1990. The human QARS locus: assignment of the human gene for glutaminyl-tRNA synthetase to chromosome 1q32-42. Hum. Genet. 85: 527-530.
2. Kaiser, E., et al. 1994. The human EPRS locus (formerly the QARS locus): a gene encoding a class I and a class II aminoacyl-tRNA synthetase. Genomics 19: 280-290.
3. Rho, S.B., et al. 1998. A multifunctional repeated motif is present in human bifunctional tRNA synthetase. J. Biol. Chem. 273: 11267-11273.
4. Quevillon, S., et al. 1999. Macromolecular assemblage of aminoacyl-tRNA synthetases: identification of protein-protein interactions and characterization of a core protein. J. Mol. Biol. 285: 183-195.
5. Jeong, E.J., et al. 2000. Structural analysis of multifunctional peptide motifs in human bifunctional tRNA synthetase: identification of RNA-binding residues and functional implications for tandem repeats. Biochemistry 39: 15775-15782.
6. Kang, J., et al. 2000. Heat shock protein 90 mediates protein-protein interactions between human aminoacyl-tRNA synthetases. J. Biol. Chem. 275: 31682-31688.
7. Sang Lee, J., et al. 2002. Interaction network of human aminoacyl-tRNA synthetases and subunits of elongation factor 1 complex. Biochem. Biophys. Res. Commun. 291: 158-164.
8. Sampath, P., et al. 2004. Noncanonical function of glutamyl-prolyl-tRNA synthetase: gene-specific silencing of translation. Cell 119: 195-208.

CHROMOSOMAL LOCATION

Genetic locus: EPRS (human) mapping to 1q41; Eprs (mouse) mapping to 1 H5.

SOURCE

ProRS (C-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of ProRS 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.

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-74860 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-74860 X, 200 µg/0.1 ml.

APPLICATIONS

ProRS (C-16) is recommended for detection of ProRS of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

ProRS (C-16) is also recommended for detection of ProRS in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for ProRS siRNA (h): sc-76254, ProRS siRNA (m): sc-76255, ProRS shRNA Plasmid (h): sc-76254-SH, ProRS shRNA Plasmid (m): sc-76255-SH, ProRS shRNA (h) Lentiviral Particles: sc-76254-V and ProRS shRNA (m) Lentiviral Particles: sc-76255-V.

ProRS (C-16) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of ProRS: 172 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

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) 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.

RESEARCH USE

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