SANTA CRUZ BIOTECHNOLOGY, INC.

TrpRS (N-17): sc-22982

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Tryptophanyl-tRNA synthetases are essential enzymes that catalyze the amino-acylation of tRNA (Trp) with tryptophan, an essential function of the cell's protein synthesis machinery. Two forms of tryptophanyl-tRNA synthetase exist: a cytoplasmic form, named TrpRS (also known as WARS), and a mitochondrial form, named WARS2. In normal cells, human TrpRS exists as a full length form and as a truncated form, designated mini TrpRS, which is produced by alternative splicing. Expression of mini TrpRs is highly stimulated in human cells by the addition of IFNγ. Although both human full-length TrpRS and mini TrpRS are enzymatically active in aminoacylation, they differ in angiostatic activity. The gene encoding human TrpRS maps to chromosome 14q32.2 and the gene encoding human WARS2 maps to chromosome 1p12. The first 18 amino acids of WARS2 constitute the mitochondrial localization signal sequence.

REFERENCES

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2. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 604733. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Wakasugi, K., Slike, B.M., Hood, J., Otani, A., Ewalt, K.L., Friedlander, M., Cheresh, D.A. and Schimmel, P. 2002. A human aminoacyl-tRNA synthetase as a regulator of angiogenesis. Proc. Natl. Acad. Sci. USA 99: 173-177.
4. Otani, A., Slike, B.M., Dorrell, M.I., Hood, J., Kinder, K., Ewalt, K.L., Cheresh, D., Schimmel, P. and Friedlander, M. 2002. A fragment of human TrpRS as a potent antagonist of ocular angiogenesis. Proc. Natl. Acad. Sci. USA 99: 178-183.
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CHROMOSOMAL LOCATION

Genetic locus: WARS (human) mapping to 14q32.2; Wars (mouse) mapping to 12 F1.

SOURCE

TrpRS (N-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of TrpRS 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-22982 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

TrpRS (N-17) is recommended for detection of TrpRS 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).

TrpRS (N-17) is also recommended for detection of TrpRS in additional species, including canine and porcine.

Suitable for use as control antibody for TrpRS siRNA (h): sc-37673, TrpRS siRNA (m): sc-37674, TrpRS shRNA Plasmid (h): sc-37673-SH, TrpRS shRNA Plasmid (m): sc-37674-SH, TrpRS shRNA (h) Lentiviral Particles: sc-37673-V and TrpRS shRNA (m) Lentiviral Particles: sc-37674-V.

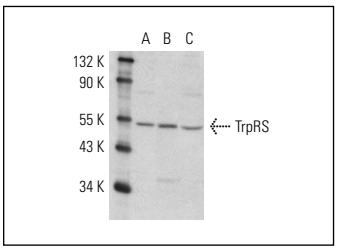
Molecular Weight of TrpRS: 53 kDa.

Positive Controls: PBL whole cell lysate, JAR cell lysate: sc-2276 or Jurkat nuclear extract: sc-2132.

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) Immunoprecip-itation: 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



TrpRS (N-17): sc-22982. Western blot analysis of TrpRS expression in human PBL (**A**) and JAR (**B**) whole cell lysates and Jurkat (**C**) nuclear extract.

RESEARCH USE

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