SANTA CRUZ BIOTECHNOLOGY, INC.

TyrRS (H-11): sc-166741

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Tryptophanyl-tRNA synthetases are essential enzymes that catalyze the aminoacylation 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 IFN-γ. Although both human full length TrpRS and mini TrpRS are enzymatically active in aminoacylation, they differ in angiostatic activity. The tyrosyl-tRNA synthetase (TyrRS), a protein related to TrpRS, exists as a homodimeric enzyme that catalyzes the aminoacylation of $tRNA^{Tyr}$ by L-tyrosine.

REFERENCES

1. Wakasugi, K., et al. 2002. A human aminoacyl-tRNA synthetase as a regulator of angiogenesis. Proc. Natl. Acad. Sci. USA 99: 173-177.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 191050. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Jia, J., et al. 2003. Expression, purification, and characterization of human tyrosyl-tRNA synthetase. Protein Expr. Purif. 27: 104-108.

CHROMOSOMAL LOCATION

Genetic locus: YARS (human) mapping to 1p35.1; Yars (mouse) mapping to 4 D2.2.

SOURCE

TyrRS (H-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 440-465 near the C-terminus of TyrRS of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TyrRS (H-11) is available conjugated to agarose (sc-166741 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166741 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166741 PE), fluorescein (sc-166741 FITC), Alexa Fluor® 488 (sc-166741 AF488), Alexa Fluor® 546 (sc-166741 AF546), Alexa Fluor® 594 (sc-166741 AF594) or Alexa Fluor® 647 (sc-166741 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166741 AF680) or Alexa Fluor® 790 (sc-166741 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166741 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

TyrRS (H-11) is recommended for detection of TyrRS of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 TyrRS siRNA (h): sc-37671, TyrRS siRNA (m): sc-37672, TyrRS shRNA Plasmid (h): sc-37671-SH, TyrRS shRNA Plasmid (m): sc-37672-SH, TyrRS shRNA (h) Lentiviral Particles: sc-37671-V and TyrRS shRNA (m) Lentiviral Particles: sc-37672-V.

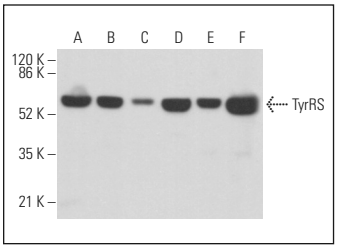
Molecular Weight of TyrRS: 59 kDa.

Positive Controls: ECV304 cell lysate: sc-2269, Ramos cell lysate: sc-2216 or Jurkat whole cell lysate: sc-2204.

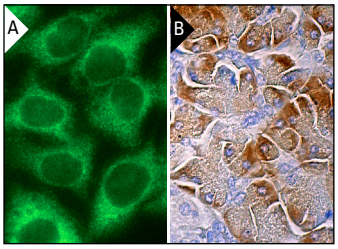
RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ 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-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



TyrRS (H-11): sc-166741. Western blot analysis of TyrRS expression in HeLa (**A**), ECV304 (**B**), SH-SY5Y (**C**), Jurkat (**D**), Ramos (**E**) and F9 (**F**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



TyrRS (H-11): sc-166741. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Gao, P., et al. 2019. Resveratrol targets TyrRS acetylation to protect against radiation-induced damage. FASEB J. 2: fj201802474RR.

RESEARCH USE

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