**BACKGROUND**

Tryptophanyl-tRNA synthetases are essential enzymes that catalyze the amino-acylation of tRNA(Trp) with tryptophan, an essential function of the protein synthesis machinery of the cell. 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 miniTrpRS, 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 miniTrpRS 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 1p13.3-p13.1. The first 18 amino acids of WARS2 constitute the mitochondrial localization signal sequence.

**REFERENCES**


**CHROMOSOMAL LOCATION**

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

**SOURCE**

TrpRS (C-7) is a mouse monoclonal antibody raised against a peptide mapping near the N-terminus of TrpRS of human origin.

**PRODUCT**

Each vial contains 200 µg IgG2b kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TrpRS (C-7) is available conjugated to agarose (sc-374401 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374401 HRP), 200 µg/ml, for WB, (HCIP) and ELISA; to either phycoerythrin (sc-374401 PE), fluorescein (sc-374401 FITC), Alexa Fluor® 488 (sc-374401 AF488), Alexa Fluor® 546 (sc-374401 AF546), Alexa Fluor® 594 (sc-374401 AF594) or Alexa Fluor® 647 (sc-374401 AF647), 200 µg/ml, for WB (RGB), IF, IHC(+) and FCN; and to either Alexa Fluor® 680 (sc-374401 AF680) or Alexa Fluor® 790 (sc-374401 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCN.

Blocking peptide available for competition studies, sc-374401 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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**STORAGE**

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

**APPLICATIONS**

TrpRS (C-7) is recommended for detection of TrpRS 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).

TrpRS (C-7) 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: HeLa whole cell lysate: sc-2200, HUV-EC-C whole cell lysate: sc-364180 or HEL 92.1.7 cell lysate: sc-2270.

**RECOMMENDED SUPPORT REAGENTS**

To ensure optimal results, the following support reagents are recommended:

**DATA**

**RESEARCH USE**

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