SANTA CRUZ BIOTECHNOLOGY, INC.

ThrRS (E-16): sc-79128

BACKGROUND

Aminoacyl-tRNA synthetases function to catalyze the aminoacylation of tRNAs by their corresponding amino acids, thus linking amino acids with tRNA-contained nucleotide triplets. ThrRS (threonyl-tRNA synthetase), also known as TARS, is a 723 amino acid member of the class-II aminoacyl-tRNA synthetase family that catalyzes the tRNA(Thr)-threonine aminoacylation reaction. Localized to the cytoplasm, ThrRS contains a zinc-binding catalytic domain, a C-terminal tRNA-binding domain and an N-terminal editing domain. ThrRS has four mobile regions, three of which have a key residue that changes conformation throughout catalysis, thereby mediating the dynamics of the tRNA-amino acid reaction. The fourth mobile region contains an ordering loop which helps to close the active site once the substrate (threonine) is in place.

REFERENCES

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2. Torres-Larios, A., Sankaranarayanan, R., Rees, B., Dock-Bregeon, A.C. and Moras, D. 2003. Conformational movements and cooperativity upon amino acid, ATP and tRNA binding in threonyl-tRNA synthetase. J. Mol. Biol. 331: 201-211.
3. Ishikura, H., Nagaoka, Y., Yokozawa, J., Umehara, T., Kuno, A. and Hasegawa, T. 2003. Threonyl-tRNA synthetase of archaea: importance of the discriminator base in the aminoacylation of threonine tRNA. Nucleic Acids Symp. Ser. 83-84.
4. Ruan, B., Bovee, M.L., Sacher, M., Stathopoulos, C., Poralla, K., Francklyn, C.S. and Söll, D. 2004. A unique hydrophobic cluster near the active site contributes to differences in borrelidin inhibition among threonyl-tRNA synthetases. J. Biol. Chem. 280: 571-577.

CHROMOSOMAL LOCATION

Genetic locus: TARS (human) mapping to 5p13.3; Tars (mouse) mapping to 15 A1.

SOURCE

ThrRS (E-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ThrRS 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-79128 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

ThrRS (E-16) is recommended for detection of ThrRS of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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

Suitable for use as control antibody for ThrRS siRNA (h): sc-76658, ThrRS siRNA (m): sc-76659, ThrRS shRNA Plasmid (h): sc-76658-SH, ThrRS shRNA Plasmid (m): sc-76659-SH, ThrRS shRNA (h) Lentiviral Particles: sc-76658-V and ThrRS shRNA (m) Lentiviral Particles: sc-76659-V.

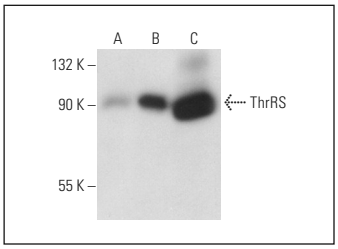
Molecular Weight of ThrRS: 83 kDa.

Positive Controls: ThrRS (h3): 293T Lysate: sc-170842, A549 cell lysate: sc-2413 or HeLa whole cell lysate: sc-2200.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



ThrRS (E-16): sc-79128. Western blot analysis of ThrRS expression in non-transfected 293T: sc-117752 (**A**), human ThrRS transfected 293T: sc-170842 (**B**) and HeLa (**C**) whole cell lysates.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.