

TS (I-13): sc-48105

BACKGROUND

Thymidylate synthase (TS), also designated TYMS, TMS, TSase and HsT422, uses 5,10-methylenetetrahydrofolate (methylene-THF) as a cofactor in the synthesis of 2'-deoxythymidine-5'-monophosphate (dTMP), an essential precursor for DNA biosynthesis. TS is an RNA-binding protein that can interact with its own mRNA. The TS/mRNA ribonucleoprotein complex can also associate with a number of other cellular mRNAs, including those corresponding to the p53 tumor suppressor gene and the Myc family of transcription factors. Inhibition of DNA replication and cell death resulting from thymidine depletion occurs when TS enzyme activity is inhibited with substrate or cofactor analogs, making the TS enzyme an important target for chemotherapy. Cancer cells are sensitive to thymidine depletion, as they multiply rapidly.

REFERENCES

- Hardy, L.W., et al. 1987. Atomic structure of thymidylate synthase: target for rational drug design. *Science* 235: 448-455.
- Ross, P., et al. 1990. Cloning and characterization of the thymidylate synthase gene from *Lactococcus lactis* subsp. *lactis*. *Appl. Environ. Microbiol.* 56: 2156-2163.

CHROMOSOMAL LOCATION

Genetic locus: TYMS (human) mapping to 18p11.32; Tyms (mouse) mapping to 5 B1.

SOURCE

TS (I-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of TS 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-48105 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TS (I-13) is recommended for detection of TS 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). TS (I-13) is also recommended for detection of TS in additional species, including equine, canine and porcine.

Suitable for use as control antibody for TS siRNA (h): sc-44978, TS siRNA (m): sc-44979, TS shRNA Plasmid (h): sc-44978-SH, TS shRNA Plasmid (m): sc-44979-SH, TS shRNA (h) Lentiviral Particles: sc-44978-V and TS shRNA (m) Lentiviral Particles: sc-44979-V.

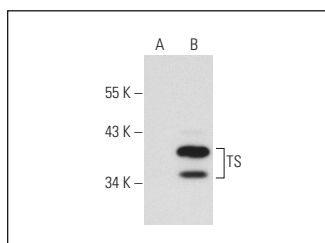
Molecular Weight of TS: 36 kDa.

Positive Controls: TS (h): 293T Lysate: sc-170183, HeLa whole cell lysate: sc-2200 or IMR-32 cell lysate: sc-2409.

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). 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



TS (I-13): sc-48105. Western blot analysis of TS expression in non-transfected: sc-117752 (A) and human TS transfected: sc-170183 (B) 293T whole cell lysates.

STORAGE

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

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.

MONOS
Satisfaction
Guaranteed

Try **TS (C-5): sc-390945** or **TS (F-7): sc-376161**, our highly recommended monoclonal alternatives to TS (I-13).