

# TPST-1 (C-19): sc-25033

## BACKGROUND

The tyrosylprotein sulfotransferases TPST-1 and TPST-2 catalyze the sulfation of tyrosine residues within secreted and membrane-bound proteins, such as cell adhesion molecules, G protein-coupled receptors, coagulation factors, serpins, extracellular matrix proteins and hormones. Although both TPST-1 and TPST-2 utilize 3'-phosphoadenosine 5'-phosphosulfate as their sulfate donor, they differ in their substrate specificity. The TPSTs are evolutionarily conserved proteins found in a wide variety of species, including human, mouse, *C. elegans* and plants. They are ubiquitously expressed in several tissues, including liver, lung, heart and cerebellum. Both TPST-1 and TPST-2 localize to the Golgi complex. Chronic alcohol consumption stimulates a threefold increase in TPST levels in the gastric mucosa and liver, indicating that TPST may play a role in alcoholism. The genes encoding human TPST-1 and TPST-2 map to chromosomes 7q11.21 and 22q12.1, respectively.

## REFERENCES

1. Kasinathan, C., et al. 1993. Inhibition of tyrosylprotein sulfotransferase by sphingosine and its reversal by acidic phospholipids. *Biochemistry* 32: 1194-1198.
2. Beisswanger, R., et al. 1998. Existence of distinct tyrosylprotein sulfotransferase genes: molecular characterization of tyrosylprotein sulfotransferase-2. *Proc. Natl. Acad. Sci. USA* 95: 11134-11139.
3. Ouyang, Y.B., et al. 1998. Molecular cloning and expression of human and mouse tyrosylprotein sulfotransferase-2 and a tyrosylprotein sulfotransferase homologue in *Caenorhabditis elegans*. *J. Biol. Chem.* 273: 24770-24774.
4. Kasinathan, C., et al. 1998. Stimulation of tyrosylprotein sulfotransferase activity by ethanol: role of increased enzyme level. *Alcohol* 15: 271-276.
5. Hanai, H., et al. 2000. Existence of a plant tyrosylprotein sulfotransferase: novel plant enzyme catalyzing tyrosine O-sulfation of preprophytyosulfokine variants *in vitro*. *FEBS Lett.* 470: 97-101.
6. Kehoe, J.W., et al. 2002. Tyrosylprotein sulfotransferase inhibitors generated by combinatorial target-guided ligand assembly. *Bioorg. Med. Chem. Lett.* 12: 329-332.
7. Ouyang, Y.B., et al. 2002. Reduced body weight and increased postimplantation fetal death in tyrosylprotein sulfotransferase-1-deficient mice. *J. Biol. Chem.* 277: 23781-23787.
8. LocusLink Report (LocusID: 8460). <http://www.ncbi.nlm.nih.gov/LocusLink/>

## CHROMOSOMAL LOCATION

Genetic locus: TPST1 (human) mapping to 7q11.21; Tpst1 (mouse) mapping to 5 G1.3.

## SOURCE

TPST-1 (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of TPST-1 of human origin.

## RESEARCH USE

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

## 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-25033 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

TPST-1 (C-19) is recommended for detection of TPST-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

TPST-1 (C-19) is also recommended for detection of TPST-1 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for TPST-1 siRNA (h): sc-41075, TPST-1 siRNA (m): sc-41076, TPST-1 shRNA Plasmid (h): sc-41075-SH, TPST-1 shRNA Plasmid (m): sc-41076-SH, TPST-1 shRNA (h) Lentiviral Particles: sc-41075-V and TPST-1 shRNA (m) Lentiviral Particles: sc-41076-V.

## 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) 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.

## SELECT PRODUCT CITATIONS

1. Xu, J., et al. 2013. Tyrosylprotein sulfotransferase-1 and tyrosine sulfation of chemokine receptor 4 are induced by Epstein-Barr virus encoded latent membrane protein 1 and associated with the metastatic potential of human nasopharyngeal carcinoma. *PLoS ONE* 8: e56114.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.