

THTPA (S-13): sc-163457

BACKGROUND

Thiamine, known more commonly as vitamin B1, is a water soluble chemical compound that is essential for proper neural function and carbohydrate metabolism. THTPA (thiamine triphosphatase), also known as THTP or THTPASE, is a 230 amino acid member of the THTPase family. Localized to the cytoplasm and expressed at low levels in a variety of tissues, including testis, uterus, prostate, bladder, lung and kidney, THTPA is a hydrolase that catalyzes the H₂O-dependent hydrolysis of thiamine triphosphate (THTP) to thiamine diphosphate (THDP), the major form of thiamine within the cell. THTPA exists as a monomer and functions at an optimal pH of 8.5.

REFERENCES

1. Makarchikov, A.F., et al. 1998. Thiamine triphosphatase activity in bovine kidney. *Biochem. Mol. Biol. Int.* 46: 115-123.
2. Lakaye, B., et al. 2002. Molecular characterization of a specific thiamine triphosphatase widely expressed in mammalian tissues. *J. Biol. Chem.* 277: 13771-13777.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611612. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Lakaye, B., et al. 2004. Expression of 25 kDa thiamine triphosphatase in rodent tissues using quantitative PCR and characterization of its mRNA. *Int. J. Biochem. Cell Biol.* 36: 2032-2041.
5. Lakaye, B., et al. 2004. Human recombinant thiamine triphosphatase: purification, secondary structure and catalytic properties. *Int. J. Biochem. Cell Biol.* 36: 1348-1364.
6. Lakaye, B., et al. 2004. Thiamine triphosphate, a new signal required for optimal growth of *Escherichia coli* during amino acid starvation. *J. Biol. Chem.* 279: 17142-17147.
7. Czerniecki, J., et al. 2004. Neuronal localization of the 25-kDa specific thiamine triphosphatase in rodent brain. *Neuroscience* 125: 833-840.
8. Szyniarowski, P., et al. 2005. Pig tissues express a catalytically inefficient 25-kDa thiamine triphosphatase: insight in the catalytic mechanisms of this enzyme. *Biochim. Biophys. Acta* 1725: 93-9102.
9. Song, J., et al. 2008. Structural basis for the catalytic mechanism of mammalian 25-kDa thiamine triphosphatase. *J. Biol. Chem.* 283: 10939-10948.

CHROMOSOMAL LOCATION

Genetic locus: THTPA (human) mapping to 14q11.2; Thtpa (mouse) mapping to 14 C3.

SOURCE

THTPA (S-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of THTPA 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-163457 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

THTPA (S-13) is recommended for detection of THTPA 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).

Suitable for use as control antibody for THTPA siRNA (h): sc-92211, THTPA siRNA (m): sc-154261, THTPA shRNA Plasmid (h): sc-92211-SH, THTPA shRNA Plasmid (m): sc-154261-SH, THTPA shRNA (h) Lentiviral Particles: sc-92211-V and THTPA shRNA (m) Lentiviral Particles: sc-154261-V.

Molecular Weight of THTPA: 25 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201.

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.

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 or our catalog for detailed protocols and support products.