ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Thiamine Transporter Protein 2 (THTR2/THR-2) Antibodies

Cat. # THTR21-P	Mouse **THTR-2** control/ blocking peptide # 1	**SIZE**: 100 ug
Cat. # THTR21-A	Rabbit Anti-mouse THTR-2 IgG # 1 (aff pure)	**SIZE**: 100 ug

A sodium-dependent transport system is responsible for transfer and distribution of vitamins to different parts of the body, the transfer includes vitamins like pantothenate, biotin, and ascorbic acid etc, These transporters belong to **Solute Carrier family (SLC)**. Since vitamins are required for essential metabolic processes in all mammalian cells, such cells have developed intrinsic mechanisms to active accumulation of essential vitamins. Thus transporters help these cells to fulfill their requirement, they include Sodium-dependent Multi-Vitamin Transporter (SMVT), Sodium-dependent Vitamin-C Transporter (SVCT) 1 & 2, Creatine Transporter (CRT1/ CT1). The other vitamin transporters from SLC family include Thiamine Transporter Protein 1 (THTR1, SLC19A2), Folate Transporter or Reduced Folate Carrier 1 (RFC1, SLC19A1), Thyroid Iodide (TIT) and Taurine Transporter (TAU) etc.

Thiamine Transporter Protein 1 (THTR1), a 498aa protein in mouse and 497 in human (chrm 1q23.3, gene SLC19A2) is a high affinity transporter for the intake of Thiamine, Most abundantly found in skeletal and cardiac muscle, lower levels are seen in placenta, heart, liver and kidney. Defects in gene are the cause of Thiamine Responsive Megaloblastic Anemia (TRMA).

Another member of thiamine transporter called THTR-2 (SLC19A3; human 496-aa, gene accession # Q9BZV2, mouse 488-aa; rat 595 aa; ~55-60 kda) have been identified. THTR-2 is Widely expressed but most abundant in placenta, kidney and liver. THTR-2 mediates high affinity thiamine uptake, propably via a proton anti-port mechanism. It has no folate transport activity. Defects in SLC19A3 are the cause of biotin-responsive basal ganglia disease (BBGD) [MIM:607483]. BBGD is a recessive disorder with childhood onset that presents as a subacute encephalopathy, with confusion, dysarthria, and dysphagia, and that progresses to severe rigidity, dystonia, quadriparesis and death if not treated

Source of Antigen and Antibodies

Antigen	17-aa peptide from mouse THTR-2 protein (accession # Q99PL8; SLC19A3)# (**Designated THTR21-P or control peptide**) conjugated to KLH; **epitope location** ~ C-terminus, Cytoplasmic domain
Ab Host/type	Rabbit, Polyclonal Aff pure IgG **(cat # THTR21-A) purified over antigen-agarose column**
2-ab	**Goat Anti-rabbit IgG-HRP** cat # 20320 (AP, biotin, FITC conjugates also available)
-ve control IgG	**# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control**

Form & Storage of Antibodies/Peptide Control

Affinity pure IgG

100 ug/100ul solution lyophilized powder

Supplied in **Buffer**: PBS+0.1% BSA

Reconstitute powder in 100 ul PBS (1mg/ml)

Control/blocking peptide

100 ug/100 ul solution lyophilized powder

Supplied in Buffer: PBS pH 7.5,

Reconstitute powder in 100 ul PBS (1 mg/ml).

Storage

Short-term: unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..

Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20oC or below.
Shipping: 4oC for solutions and room temp for powder.

Recommended Usage

Western Blotting (1-10 ug/ml for affinity pure antibody using ECL technique).

ELISA: Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (0.5-1 ug/ml for affinity pure).

Histochemistry & Immunofluorescence: Not tested. We recommend the use of aff pure IgG at 2-20 ug/ml.

Specificity & Cross-reactivity

The mouse THTR21-P control peptide is 70% conserved in rat and ~50 % in human THTR-2. We recommend the use of cat# THTR22-A for human THTR-2. No significant homology of THTR21-P exists with THTR-1 or RFC-1. Antibody cross-reactivity in various species has not been studied. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (see detailed protocol at the web site).

General References: Eudy JD (2000) Mol Genet. Metab. 71, 581-590; Rajgopal A (2001) BBA 1537, 175-181; Zeng W-Q. (2005) Am. J. Genet. 77, 16-26.

**This product is for In vitro research use only.*

Related material available from ADI

Antibodies and Peptides: Different Nutrient transporters SMVT, Creatine transporter, Folate transporter, Thiamine transporter, Thyroid Iodide transporter, Taurine transporter

THTR21-A-P 81201A

India Contact:
Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com