

Product Specification Sheet

Thyroid Iodide Transporter (TIT) Antibodies

Cat. TIT11-S	Rabbit Anti-Rat TIT transporter	SIZE: 100 ul
Cat. TIT11-A	Rabbit Anti Rat TIT transporter IgG (aff pure)	SIZE: 100 ug
Cat. TIT11-P	Rat TIT transporter Control peptide	SIZE: 100 ug

Iodide (I⁻) is an essential constituent of thyroid hormones. Thyroid epithelial cells for the biosynthesis of thyroid hormones actively transport it. At the cellular level, iodide transport is mediated by intrinsic membrane **Na⁺/I⁻ symporter (NIS/TIT)**. Rat **TIT/SLC5A** (618 aa; ~66 kDa; mouse 618 aa; human 643 aa) is predicted to contain 12 transmembrane domains. The N-terminus has a short extracellular domain, whereas C-terminus is predicted to be cytoplasmic. TIT is primarily expressed in thyroid but also detected in mammary gland and ovary. Its expression is reduced in tumors. Defects in TIT gene are associated with iodide transport defect (ITD), which is characterized by an inability of the thyroid to maintain concentration difference of readily exchangeable iodine between plasma and the thyroid gland. It is a cause of congenital hypothyroidism.

Source of Antigen and Antibodies

Antigen	16-aa peptide from rat TIT (1) ; Designation (TIT11-P or control peptide/blocking peptide) conjugated to KLH; Epitope location ~ C-terminal, Cytoplasmic domain
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (#TIT11-S) and IgG, purified over antigen-agarose (Cat # TIT11-A)
2-Ab	Cat # 20320 , goat anti-rabbit IgG-HRP (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 PBS at 1mg/ml

Control/blocking peptide
100 ug/100 ul solution lyophilized powder
Supplied in **Buffer:** PBS pH 7.5,
Reconstitute powder in PBS at 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 (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure using Chemiluminescence technique).

ELISA (1:100K; using 50-100 ng control peptide/well).

Histochemistry & Immunofluorescence: we recommend the use of affinity purified antibody at 2-20 ug/ml in formaldehyde fixed tissue (see refs 2).

Specificity & Cross-reactivity

The 16-aa rat TIT11-P peptide sequence is unique to TIT and no significant sequence is seen with glucose transporter or other Na⁺-dependent transporters. TIT11-P sequence is 100% conserved in mouse, and only 25% in human TIT. 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 (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol at the web site).

General References: (1) Dai G et al (1996) Nature 379, 458-460; Smanik PA et al (1996) BBRC 226, 339-345; Saito T et al (1997) J. Clin. Endocrinol. Metabol. 82, 3331-3336; Fujiwara H et al (1997) Nat. Genet. 16, 124-125; Kosugi S et al (1999) J. Clin. Endocrinol. Metabol. 84, 3248-3253; Paire A et al (1997) J Biol. Chem. 272, 18246-18249

(2) Citations of ADI's Antibodies (see web site for updated list)

JOSEFSSON M, 2002, Sodium/iodide-symporter: distribution in different mammals and role in entero-thyroid circulation of iodide "Acta Physiologica Scandinavica, 175, 129, Used in IHC.

Citations of for TIT (see updated list at the web site)

Authors	Year of Pub	Journal	Western IHC
JOSEFSSON M	2002	Acta Physiologica Scinavica	175
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*This product is for in vitro research use only.

Some New Antibodies from ADI...

- **Neurotransmitter Transporters** • Acetylcholine • BGT-1 • Dopamine • GAT1-3; • Glyt 1, 2 • Glutamate (GLT1, GLAST, EAAC1) • Serotonin • Proline

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