

Product Specification Sheet

NPT2b (Type IIb) Antibodies

Cat # NPT2B11-P	Mouse NPT2b control/ blocking peptide # 1	SIZE: 100 ug
Cat # NPT2B11-S	Rabbit Anti-Mouse NPT2b antiserum #1	SIZE: 100 ul
Cat # NPT2B11-A	Rabbit Anti-Mouse NPT2b IgG #1, aff pure	SIZE: 100 ug

Inorganic phosphate (Pi) levels are hormonally regulated that affects the physiological activity of bone, kidney, and small intestine. Majority of the Pi is absorbed in the small intestine and reabsorbed in the proximal tubules in the kidney. At least 4 groups of structurally and functionally related proteins are involved in Pi transport: **Type I-related** NaPi transporters designated **NPT1**, **Npt1**, and **NaPi-1** respectively in humans, mouse, and rabbit are expressed in the kidney and liver. Its expression and activity are not regulated by Pi deprivation or parathyroid hormone (PTH) and its role in Pi-homeostasis is not clear. **Type IIa-related** cotransporters, designated **NaPi-2** in rat, **NaPi-3** or **NPT2** in humans, **NaPi-4** in opossum, **NaPi-5** in flounder vessel, **NaPi-6** or **Npt-2** in mouse, and **NaPi-7** in rabbit, is the primary target for Pi regulation by dietary, hormonal, and tubular Pi reabsorption. Deletion of Npt2 gene produces severe Pi wasting. Type II transporters are expressed in kidney, brain, lung, bone and small intestine. **Type IIb**, designated as **NaPi-IIb** or **NaPi-2b** in rat/mouse, and **NaPi-3b** in human, is closely related isoform of the NaPi-2 family. It is expressed in small intestine and lung. **Type III NaPi** transporters, originally described as a family of cell surface receptors for gibbon ape leukemia virus (**GALV**) and murine amphotropic retrovirus (A-MuLV), share very low (<20%) sequence homology with Type I and II proteins, and are found in most tissues. Human homolog is now designated as **PiT1** (also known as GALV receptors or GLVR1) and **PiT2** (A-MuLV receptors or GLVR2 or Ram1). Pit1 and Pit2 are ~62% related and predicted to contain 10 TM domains that is in contrast with Type 1/2 transporters (6-8 TM). The N and C-termini are predicted to be cytoplasmic.

FUNCTION: May be involved in actively transporting phosphate into cells via Na(+) cotransport. It may be the main phosphate transport protein in the intestinal brush border membrane. May have a role in the synthesis of surfactant in lungs' alveoli.

SUBCELLULAR LOCATION: Membrane; Multi-pass membrane protein.

SIMILARITY: Belongs to the SLC34A transporter family.

Protein name Sodium-dependent phosphate transport protein 2B
Synonyms Sodium/phosphate cotransporter 2B
 Na(+)/Pi cotransporter 2B, Sodium-phosphate transport protein 2B
 Na(+)-dependent phosphate cotransporter 2B, NaPi-2b
 Solute carrier family 34 member 2

Gene name Name: Slc34a2; **Synonyms:** Npt2b

Source of Antigen and Antibodies

Antigen	15-aa peptide of mouse NPT2B/Slc34a2 (protein accession #Q9DBP0) (designated NPT2B11-P; control peptide) conjugated to KLH; Epitope location~C-terminus, cytoplasmic
Ab Host/type	Rabbit, polyclonal Aff pure IgG (cat #NPT2B-A) purified over the antigen column
2-ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available)
-ve control	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)

100ul solution lyophilized powder
 Supplied in Buffer: 0.05% azide
Reconstitute powder in 100 ul PBS

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 20°C and powder at 4°C or -20°C..

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

Stability: 6-12 months at -20°C or below.

Recommended Usage

Western Blotting 1:1K-5K for antiserum and 1-10 ug/ml for affinity pure antibody using Chemiluminescence technique. The glycosylated NPT2b is ~ 108 kDa in small intestine apparent mol wt .

ELISA: Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (1:10-50K for neat serum and 0.5-1 ug/ml for affinity pure).

Histochemistry & Immunofluorescence: not tested.

Specificity & Cross-reactivity

The NPT2B11-P peptide is 93% conserved in rat NaPi-2b. No significant sequence homology of NPT2B11-P is observed with NaPi-2a or other Pi-transporters (Type-I, III, or IV) transporters. We recommend the use of NPT2B12 for human NaPi-2b. Antibody crossreactivity in various species is not established. 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

General References:

(1). Hilfiker H et al (1998) PNAS 95, 14564-14569; Hasimoto M et al (2000) Am. J. Physiol. 157, 21-27; Xu H et al (1999) Genomics 62, 281-284; Field JA et al (1999) BBRC 258, 578-582; (2) Murer H et al (2000) Physiol. Rev. 80, 1373 (review); Werner A et al (2001) Am. J. Physiol. Integ. Comp. Physiol. 280, R301 (review).

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

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