

Product Specification Sheet

NPT2b (Type IIb) Antibodies

Cat # NPT2B12-P	Human NPT2b control/blocking peptide # 2	SIZE: 100 ug
Cat # NPT2B12-S	Rabbit Anti-Human NPT2b antiserum #2	SIZE: 100 ul
Cat # NPT2B12-A	Rabbit Anti-Human NPT2b IgG #2, 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. The N and C-termini are predicted to be cytoplasmic.

Source of Antigen and Antibodies

Antigen	Human Type-IIb, Napi-2b is ~689/690 aa (rat 695 aa, mouse 697 aa) protein. 16-aa peptide from human NaPi-2B (1) ; Designation (#NPT2B12-P, control/blocking peptide) conjugated to KLH; epitope location ~ N-terminal, Cytoplasmic domain
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (#NPT2B12-S) and IgG, purified over antigen-agarose (Cat # NPT2B12-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

Antiserum (unpurified)
100ul solution lyophilized powder
Supplied 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 -200C and powder at 40C or -200C..

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 -200C or below.

Shipping: 40C for solutions and room temp for powder

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: (see published refs using this antibody in 2).

Specificity & Cross-reactivity

Human NPT2B12-P peptide is 68% conserved in mouse and 62% in rat NaPi-2b. No significant sequence homology of NPT2B12-P is observed with NaPi-2a or other Pi-transporters (Type-I, III, or IV) transporters. We recommend the use of NPT2B11 for mouse/rat 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 (see detailed protocol see detailed protocol at the web site).).

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

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

Larsson T, 2004, Endocrinology, 145: 3087 – 3094, IHC

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

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