

Product Specification Sheet

**Human NPT2 Antibodies**

<b>Cat # NPT22-P</b>	<b>Human NPT2 control/blocking peptide # 2</b>	<b>SIZE:</b> 100 ug
<b>Cat # NPT22-S</b>	<b>Chicken Anti-Human NPT2 antiserum #2</b>	<b>SIZE:</b> 100 ul
<b>Cat # NPT22-A</b>	<b>Chicken Anti-Human NPT2 IgG #2, aff pure</b>	<b>SIZE:</b> 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.

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.

**Recommended Usage**

**Western Blotting** 1:1K-5K for antiserum and 1-10 ug/ml for affinity pure antibody using Chemiluminescence technique. NPT2a apparent mol wt is 80-90 kDa, and under reducing conditions 2 bands of 40-50 kDa are observed. It may also form multimeric structures (170 and 200 kDa). (see Murer 2000)

**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 NPT22-P peptide is 100% conserved in rat, mouse, sheep, 95% in opossum, and 90% in chicken, zebra fish, frog, zebra fish **NPT2a** proteins. The NPT22-P sequence is also highly conserved (~90%) in mouse, human, and other species **NPT2b/Type-IIb**. Therefore, antibodies are expected to detect both **Type2a and Type2b NPT2**. No significant sequence homology of NPT22-P is observed with other Pi-transporters (Type-I, III, or IV) transporters. 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) Magnin S (1993) PNAS 90, 5979; Collins JF (1996) FASEB J 8, 862; Hartman CM (1996) PNAS 93, 7409; Murer H (2000) Physiol. Rev. 80, 1373 (review); Werner A (2001) Am. J. Physiol. Integ. Comp. Physiol. 280, R301  
*\*This product is for In vitro research use only.*

**Source of Antigen and Antibodies**

<b>Antigen</b>	20-aa peptide of human NPT2 (gene accession # , refs (1) ; <b>Designated (NPT22-P or control peptide)</b> conjugated to KLH; epitope location ~ ~ within the 2nd extracellular loop (between TM3-4)
<b>Ab Host/type</b>	<b>Chicken</b> , Polyclonal antiserum # <b>NPT22-S</b> and IgG, purified over antigen-agarose (Cat # <b>NPT22-A</b> ) purified over antigen-agarose column. An antibody to this antigenic peptide is also produced in <b>rabbits</b> (Cat # NPT21-S & NPT21-A).
<b>2-Ab</b>	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
<b>-ve</b>	<b>Goat Anti-chicken IgG-HRP</b> cat # 60320 (AP, biotin, FITC conjugates also available)

**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

**Related material available from ADI**

Anti-Napi I-III, Sialin , EAAC1, GLT1, EAAT4, EAAT5, GTRAP41, NPT22, VGLUT1/BNPI, VGLUT-2/DNPI & GABA Transporters  
NPT22-S-A-P 71213A

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