ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

PiT-2 (GLVR-2/Ram-1) Antibodies

Cat # PIT21-P	**Human** PiT-2 control/blocking peptide # 1	**SIZE**: 100 ug
Cat # PIT21-S	**Rabbit** Anti-Human PiT-2 antiserum #1	**SIZE**: 100 ul
Cat # PIT21-A	**Rabbit** Anti-Human PiT-2 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 in 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.

Source of Antigen and Antibodies

Antigen	19-aa peptide from **Human PiT-2/GLVR-2 (-P, control/blocking peptide**) conjugated to KLH; epitope location ~ 4th putative **cytoplasmic domain**
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (#PIT21-S) and IgG, purified over antigen-agarose (Cat # PIT21-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 -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 antiserum and 1-10 ug/ml for affinity pure antibody using Chemiluminescence technique. PiT-2 apparent mol wt ~72 kDa.

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 PIT21-P peptide is 100% conserved in rat, hamster, and 94% in mouse, cat PiT-2/GLVR-2. No significant sequence homology of PIT21-P is observed with PiT-1 or NaPi-Type I, -2, 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). Van Zeijl M (1994) PNAS 91, 1168-1172; Miller DG (1994) PNAS 91, 78-82; Bai L (2000) Am. J. Physiol. 279, C1135-C1143; (**2**) Boyer CJC (1998) BBA 1368, 73-83; Fernandes I (1999) Am. J. Physiol. 277, F543-F551; **(3)** Murer H (2000) Physiolo. Rev. 80, 1373 (review); Werner A (2001) Am. J. Physiol. Integ. Comp. Physiol. 280, R301 (review).

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

Yoshiko Y, 2007, Mol. Cell. Biol., Jun 2007; 27: 4465 - 4474, WB,
Low-Wang C, 2007, Atherosclerosis, In Press, WB,
Cecilia c, 2007, Atherosclerosis, In Press, WB,

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

PIT21-S-A-P 71213A

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