ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

**Organic Cation Transporter 2 (OCT2) Antibodies**

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| Cat. # OCT21-P | Rat OCT2 control/blocking Peptide | **SIZE**: 100 ug |
| Cat. # OCT21-S | Rabbit Anti-rat OCT2 antiserum | **SIZE**: 100 ul |
| Cat. # OCT21-A | Rabbit Anti-rat OCT2 IgG (affinity pure) | **SIZE**: 100 ug |

Mammalian kidney and liver are critical in maintaining physiological ionic environment. Kidney specializes in removing toxins, drugs, and other organic cations from the blood by an active process called "renal secretion". Functional studies have identified two distinct categories of organic cation transporters (OCTs): a system driven by transmembrane potential difference that governs the influx of cations, whereas the H+-gradient-dependent transport system may mediate the efflux of organic cations. Several multispecific, potential-sensitive transporters (**OCT1-3**) and H+-dependent transporters (**OCTN1-3**) have been cloned and characterized from various tissues. OCT superfamily of proteins shares high degree of sequence homology, display up to 12 transmembrane domains with cytoplasmic N and C-terminus.

Rat **OCT2** was initially cloned from kidney by homology screening. OCT2 (rat 593 aa, mouse 553 aa, human 555 aa) shares ~70% homology with OCT1. In rat, it is expressed primarily in kidney, and traces were found in colon stomach, and brain. Rat OCT2 has been localized to the basolateral membrane of S2 and S3 segments of proximal tubules. In contrast, OCT2 was localized to the luminal membranes of distal tubule. OCT2 also mediated uptake of a variety of organic cations.

## Source of Antigen and Antibodies

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| **Antigen** | 21-aa peptide of Rat OCT2/ Slc22a2 (gene accession # P70485) Designated (OCT21-P or control peptide).conjugated to KLH; **epitope location** ~ Mid-region |
| **Ab Host/type** | Rabbit, polyclonal Unpurified antiserum (cat #OCT21-S) Aff pure IgG (**cat #OCT21-A**) purified over antigen-agarose column |
| **2-ab** | **Goat Anti-rabbit IgG-HRP** cat # 20320 (AP, biotin, FITC conjugates also available) |
| **-ve** | # 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 -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 neat serum and 1-10 ug/ml for affinity pure antibody using ECL technique). (see published refs using this antibody in 2).

**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: We recommend the use of affinity purified antibody at 2-20 ug/ml in paraformaldehyde fixed sections of tissues. (see published refs using this antibody in 2).

## Specificity & Cross-reactivity

The 21 AA rat OCT21-P control peptide is 76% conserved in mouse, 66% in pig, and 57% in human OCT2 (2). No significant sequence homology is detected with other OCTs or OCTNs. Antibody cross-reactivity in various species has not been studied. The OCT21-P 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) Okuda M et al (1996) BBRC 224, 500-507, Mooslehner KA et al (1999) Mamm. Genome. 10, 218-224; ; Gorbuleve V et al (1997) DNA Cell Biol. 16, 871; Koespell H (1998) Ann Rev. Physiol. 60, 243-266 (review).
**(2) Citations of ADI's Antibodies** (see web site for updated list)

Miakotina OL; 2004; AJP Lung Cell Mol Physiol, 288, 93-102; WB;
Yonezawa A; 2005; Biochem. Pharmacol. 70, 1823-1831; WB;
Rytting E; 2007; Bicohem Pharmacol. 73, 891-900; WB;
Kuan-M M; 2005; Toxicol. Sci., Oct 2005; WB;
marin-Kuan M; 2006; Toxicol. Sci., Jan 2006; 89: 120 - 134; ;
Ludwig T; 2004; Kidney Intl. 66, 1, 196-202; WB;
Thomas MC; 2003; Kidney Intl. 63, 6, 2152-2161; WB; IHC
Grover B; 2004; J. Pharmacol. Exp. Ther., 308, 949-956; WB;
Muller J; 2005; Biochem. Pharmacol. 70, 1851-1860; WB;
Lips KS; 2006; European Urology in press; ; IHC
Lips KS; 2005; Am. J. Respir. Cell Mol. Biol., 33: 79 - 88; ; IHC
Lash LH; 2006; Toxicology, 228, 200-218; WB;

*This product is for In vitro research use only.



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