ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Organic Cation Transporter 1 (OCT1) Antibodies

Cat. # OCT11-P	Rat OCT1 Control Peptide	**SIZE**: 100 ug
Cat. # OCT11-S	Rabbit Anti-rat OCT1 antiserum	**SIZE**: 100 ul
Cat. # OCT11-A	Rabbit Anti-rat OCT1 IgG (aff 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.

OCT1 (rat/mouse 556 aa, ~95% homology; human 554 aa, ~78% homology with rat OCT1) is expressed primarily in the kidney, liver, and intestine. Rat OCT1 has been localized to the basolateral membrane of small intestinal enterocytes, hepatocytes, and S1 segment of the proximal renal tubules. OCT1 mediated uptake of TEA was pH and Na+-independent and was reduced when membrane potential decreased. OCT1 also transported NMN, choline, MPP, dopamine, thiamine, noradrenaline, histamine, and spermine but not for putrescine.

Source of Antigen and Antibodies

Antigen	21-aa peptide from **rat OCT1 (1)**; (gene accession # S50862) **Designation (#OCT11-P, control/blocking peptide**) conjugated to KLH
Location	~C-terminus, Cytoplasmic domain
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (#OCT11-S) and IgG, purified over antigen-agarose (Cat # OCT11-A)
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (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
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 neat serum and 1-10 ug/ml for affinity pure antibody using ECL technique). OCT1 is approx. 66 kDa in rat Kidney (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: Not tested. We recommend the use of affinity purified antibody at 2-20 ug/ml in paraformaldehyde fixed sections of tissues (2).

Specificity & Cross-reactivity

The 21 AA rat OCT11-P control peptide is 100% conserved in rat OCT1a (430 aa), an alternatively spliced form of rat OCT1 (1). Rat OCT11-P sequence is 90% conserved in mouse OCT/LX-1, and 66% in human OCT1 and 64% in rabbit. No significant sequence homology is detected with other OCTs or OCTNs. Antibody cross-reactivity in various species has not been studied. The OCT11-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 at: www.4adi.com\data\abblock.html).

General References:

(1). Grundemann D (1994) Nature 549; Zhang L (1997) JBC. 272, 16548; Zhang L (1997) Mol. Pharmacol. 51, 913; Gorbuleve V (1997) DNA Cell Biol. 16, 871; Koespell H (1998) Ann Rev. Physiol. 60, 243-266 (review). **(2).** Urakami Y (1998) J Pharmacol. Expt. Therap. 287, 800-805; Meyer-Wentrup F (1998) BBRC 248, 673

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

Ludwig T 2004, Kidney Intl. 66, 196-202, WB
Thomas MC, 2003, Kidney Intl. 63, 2152-2161, WB IHC
Miakotina OL, 2004, Am J Physiol Lung Cell Mol Physiol, 288, 93-102; WB
Grover BL, 2004, J Pharmacol. Exp. Ther., 308, 949-956, WB

*This product is for In vitro research use only.

OCT11-S-A-P 50201A

Alpha Diagnostic Intl Inc., 6203 Woodlake Center Dr, San Antonio, TX 78244, USA; **Email**: service@4adi.com
☎ (800) 786-5777; (210) 561-9515; **Fax**: (210) 561-9544; **Web Site**: www.4adi.com