ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Organic Cation Transporter 2 (OCTN2) Antibodies

Cat. # OCTN21-P	Mouse OCTN2 Control Peptide # 1	**SIZE**: 100 ug
Cat. # OCTN21-S	Rabbit Anti-Mouse OCTN2 antiserum # 1	**SIZE**: 100 ul
Cat. # OCTN21-A	Rabbit Anti-Mouse OCTN2 IgG # 1 (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.

OCTN2, a structural homolog of OCTN1, has been identified as **carnitine transporter**. OCTN2 (human/rat/mouse 557 aa) shares ~76% homology with OCTN1. It is strongly expressed in human kidney, skeletal muscle, heart, and placental in adult humans. In rat, OCTN2 expression was found in the proximal and distal tubules and in the glomeruli in the kidney, in the myocardium, valves, and arterioles in the heart, in the labyrinthine layer of the placenta, and brain (cortex, hippocampus, and cerebellum). OCTN2 mediated uptake of carnitine in a Na+-dependant manner, whereas other organic cations were transported without Na+.

Source of Antigen and Antibodies

Antigen	17-aa peptide from Mouse **OCTN2** (1); (gene accession # Q9Z0E8) **Designation (OCTN21-P, control peptide or blocking peptide**) conjugated to KLH
Location	~C-terminus, Cytoplasmic domain
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (#**OCTN21**-S) and IgG, purified over antigen-agarose (Cat # **OCTN21**-A)
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
-ve control	# 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.
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).

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.

Specificity & Cross-reactivity

The 17 AA mouse OCTN21-P control peptide is 88% conserved in rat, 76% in human OCTN2. No significant sequence homology is detected with other OCTs or OCTNs. Antibody cross-reactivity in various species has not been studied. The OCTN21-P control peptide is available to confirm specificity of antibodies. 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). Wu X et al (1998) BBRC 246, 589-595; Tamai I et al (1998) J. Biol. Chem. 273, 20378-20382; tang NLS et al (1999) Hum. Mol. Genet. 8, 655-660; Wu X et al (1999) J. Pharamcol Exp. Therap. 290, 1482-1492; Koespell H (1998) Ann Rev. Physiol. 60, 243-266 (review).

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

Rytting E, 2005, Pharmacol. Exp. Ther., 312, 192-198, WB

*This product is for In vitro research use only.

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