ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Organic Cation Transporter 3 (OCT3) Antibodies

Cat. # OCT31-P	Rat OCT3 Control/blocking Peptide	**SIZE**: 100 ug
Cat. # OCT31-S	Rabbit Anti-rat OCT3 antiserum #1	**SIZE**: 100 ul
Cat. # OCT31-A	Rabbit Anti-rat OCT3 Ig #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.

OCT3 (Organic cation transporter 3; Synonyms Extraneuronal monoamine transporter, EMT, Solute carrier family 22 member 3, Gene name Name: SLC22A3; Synonyms: EMTH) rat/mouse 551 aa; human 556 aa) share 30% homology with OCT1 and 51% with OCT2. It is most abundant in rat placenta, and moderate in the intestine, heart, and brain. OCT3 expression is very low in kidney and lung and is undetectable in the liver. OCT3 recognized TEA and guanidine along with other cations including neurotoxin (MPP0, neurotransmitter dopamine, and steroids. OCT3 has been identified as extraneuronal monoamine transporter (uptake$_2$).

Source of Antigen and Antibodies

Antigen	18-aa peptide from **rat OCT3 (gene accession # O88446, refs 1)**; **Designation (OCT31-P, control/blocking peptide**) conjugated to KLH
Location	~Mid region
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (# OCT31-S) and IgG, purified over antigen-agarose (Cat # OCT31-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 18 AA rat OCT31-P control peptide is 100% conserved in mouse, rat, OCT3, 94% in human and 88% in rabbit OCT3/EMT. No significant sequence homology is detected with other OCTs or OCTNs. Antibody cross-reactivity in various species has not been studied. The OCT31-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:
Kekuda R et al (1998) J. Biol. Chem. 273, 15971-15979; Verhaagh S et al (1999) Genomics 55, 209-218; Gruendemann D et al (1998) Nat. Neurosci. 1, 349-351; Wu, X et al (1998) J. Biol. Chem. 273, 32776-32786; Koespell H (1998) Ann Rev. Physiol. 60, 243-266 (review).

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

Shang T, 2003, J. Neurochem., 85: 358 – 367, IHC
Zhang N, 2003, ARVO Meeting Abstracts,; 44: 3441, WB

*This product is for In vitro research use only.

Related material available from ADI

Antibodies CLC1-7 and CLC-K1; KCCL1-3; AQP-9 and RUT; OCT1-3, OCTN1-3, and OAT1-3, and OATK1/K2, AE-3, and NACX1-3, NaPi and NaHCO3 transporters 1-3, NHE1-5

OCT31-S-A-P 70713A

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