ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Cyclic Nucleotide-Gated Channels 1 (CNG1) Antibodies

Cat. # CNG11-P	Rat CNG1 Control Peptide # 1	**SIZE**: 100 ug
Cat. # CNG11-S	Rabbit Anti-rat CNG1 antiserum # 1	**SIZE**: 100 ul
Cat. # CNG11-A	Rabbit Anti-rat CNG1 Ig G (affinity pure) # 1	**SIZE**: 100 ug

The cyclic nucleotides cAMP and cGMP are implicated in signal transduction events such as the visual transduction, relaxation of smooth muscles, intestinal secretion of water and salt, reabsorption of Na+ and water in the distal tubule of the nephrons. cAMP/cGMP activate Ca2+ -permeable ion channels called cyclic nucleotide-gated channels (CNG or CNC). Activation of CNG leads to depolarization of the membrane voltage and to a concomitant increase of the cytosolic Ca2+. CNG consists of two distinct subunits, designated α and β subunits. Several CNG α-subunits (**CNGα 1-3**) & beta subunits (subunit 2 or CNGβ1-2 or **CNG4-5**) and numerous isoforms. α-subunit can form functional channel by themselves, whereas, β-subunits modulate the channel property of α-subunits. CNG display intracellular N and C-termini, 6 transmembrane domains or segments (S1-S6). The region between S5 and S6 contains the ion-conducting pore (P). The cyclic nucleotide-binding region is found at the c-terminus. Native functional CNG may exists as heteromultimer containing some combination of α, and β subunits.

Bovine CNG1 was initially cloned and characterized from rod cells. **CNG1** (rat 683 aa, mouse 684, human 686 aa; also describes as OCNC1) is primarily expressed in outer segment of photoreceptor rod cells, and in a variety of tissues (kidney, eye, pineal gland, pituitary, adrenal, spleen, brain, heart, skeletal muscle, and testis). Human/mouse CNG1 exhibit ~88% sequence homology.

Source of Antigen and Antibodies

Antigen	16aa peptide of rat/ mouse CNG1 ; **Designated (CNG11-P or control peptide).** epitope location ~ N-terminal, Cytoplasmic domain
Ab Host/type	Rabbit, polyclonal Unpurified antiserum (cat #CNG11-S) Aff pure IgG1 (**cat #CNG11-A**) purified over antigen-agarose column
2-ab	**Goat Anti-rabbit IgG-HRP** cat # 20320 (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 neat serum and 1-10 ug/ml for affinity pure antibody using ECL technique). See refs 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 1-20 ug/ml in paraformaldehyde fixed sections of tissues. See refs in 2

Specificity & Cross-reactivity

The 16 AA rat CNG11-P control peptide is 93% conserved in mouse, 87% in human, canine, bovine, pig, and 56% in chicken CNG1. No significant sequence homology is detected with other CNGs. Antibody cross-reactivity in various species has not been studied. The CNG11-P control peptide, because of small size (mol. wt 1.697 kDa), is not suitable for Western. It should be used for ELISA and antibody blocking 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 the web site).

General References: (1). Ding C et al (1997) Am. J. Physiol. 272, C1335; Pittler SJ et al (1992) J Biol. Chem. 267, 6257; Karlson KH et al (1995) BBA 1236, 197. **(2).** Dhallan RS et al (1992) J Neurosci. 12, 3248; Distler M et al (1994) Neuropharmacol. 33, 1275; Bonigk et al (1993) Neuron 10, 865.

2. Citations of for ADI Antibodies (see updates at the web site)

Kruse LS, 2006, Neuroscience Letters 404, 202-207, WB,
Podda MV, 2007, J. Physiol. In press, , IHC

*This product is for In vitro research use only.

Related material available from ADI

Antibodies CNG1-4; ENaCs (α, β, and γ) CLC1-7 and CLC-K1; KCCL1-3; AQP1-9 and RUT; OCT/OCTN1-3, OAT1-3, OATK1/K2, AE1-3, and NCKX1-3, NaPi and NaHCO3 transporters 1-3, NHE1-5

CNG11-S-A-P 71217A

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