

Product Specification Sheet

Hyperpolarization-activated Cyclic Nucleotide-gated channel 3 (HCN3) Antibodies

<input type="checkbox"/> Cat. # HCN31-S	Rabbit Anti-Mouse HCN3 antiserum	SIZE: 100 ul
<input type="checkbox"/> Cat. # HCN31-A	Rabbit Anti-Mouse HCN3 IgG (Aff pure)	SIZE: 100 ug
<input type="checkbox"/> Cat. # HCN31-P	Mouse HCN3 Control/blocking peptide	SIZE: 100 ug

Heart beating is the most reliable and rhythmic biological phenomenon. Cardiac pacemaking is produced by the slow diastolic depolarization phase of the action potential. The hyperpolarization-activated cation current (termed I_f , I_h , or I_q) plays a key role in the initiation and modulation of cardiac and neuronal pacemaker depolarization. The I_f channel has been designated as "pacemaker" channel because it reveals unique features that are believed to be a prerequisite for pacemaker activity. Recently, the **hyperpolarization-activated cyclic nucleotide-gated families of ion channel proteins (HCN1-4)** have been identified as the "pacemaker" channel. The amino acid sequences of HCNs predict a structure similar to that of voltage-gated (Kv) channels and cyclic nucleotide-gated (CNG) channels. HCNs proteins (HCN1-4) are characterized by six transmembrane domains (S1-S6), including a positively charged voltage-sensing S4 segment and an ion-conducting pore between S5 and S6. In the C terminus the HCNs carry a cyclic nucleotide-binding domain (CNBD), a motif found in several cyclic nucleotide-binding proteins. The core region of HCNs channels (S1 to the C terminus of the CNBD) is highly conserved, whereas the cytoplasmic N and C-termini, vary considerably in their length and share only weak sequence homology.

HCN3 or **HAC3** (rat 780-aa, mouse 779-aa, human 703 aa) has been detected in brain but its expression was much less than other HCNs. Its expression was also detected in liver, lung, and kidney of mouse by some researchers but not by others.

Source of Antigen and Antibodies

Antigen	17-aa peptide from mouse HCN3-(1) ; (Gene Accession #NP032253) Designation (#HCN31-P, control/blocking peptide) conjugated to KLH; epitope location ~ cytoplasmic, C-terminus , after the CNBD domain
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (#HCN31-S) and IgG, purified over antigen-agarose (Cat # HCN31-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 -200C 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 using Chemiluminescence technique).

ELISA (1:10K-1:100K; using 50-100 ng of control peptide/well).

Histochemistry & Immunofluorescence: not tested. We recommend the use of affinity pure antibody at 2-20 ug/ml.

Specificity & Cross-reactivity

The HCN31-P peptide is 100% conserved in mouse, 94% in rat, and 82% in human HCN3. No significant sequence homology of HCN31-P is seen with other HCNs or any other protein. Antibody reactivity in various species is not known. The HCN31-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 the web site).

General References: (1) Ludwig A et al (1999) EMBO J. 18, 2323-2329; Santoro B et al (1997) PNAS 94, 14815-14820; Santoro B et al (1998) Cell 93, 717-729; Waigner BJ et al (2001) Nature 411, 825-810;

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

Strauss U, 2004, Eur. J. Neuros.19, 3048-3058, WB

**This product is for In vitro research use only.*

HCN31-S-A-P

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