ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Acid Sensing Ion Channels 1 (ASIC1/BNaC2) Antibodies

Cat. # ASIC11-P	Rat ASIC1 Control/blocking Peptide	**SIZE**: 100 ug
Cat. # ASIC11-S	Rabbit Anti-rat ASIC1 antiserum	**SIZE**: 100 ul
Cat. # ASIC11-A	Rabbit Anti-rat ASIC1 antiserum (aff pure)	**SIZE**: 100 ug

Tissue acidosis that occurs in ischemia, tissue damage or inflammation is accompanied by pain. Proton-gated cation channels are activated by low pH in nociceptive neurons. H+-gated channels are members of the **NaC/DEG superfamily** that include: (1) Amiloride-sensitive epithelial Na+ channels (α, β, and γ, and δ-ENaC subunits); (2) A FMRFamide-gated channel (**FaNaC**), (3) and mechanosensory channel proteins of nematode **degenerins (DEG**). All members of this family are selective for Na+ and blocked by amiloride.

The **m**ammalian homolog of **deg**enerins (**MDEG** or **MDEG1**; now designated ASIC for Acid Sensing Ion Channels). Three are at least three distinct proteins in ASIC family: **ASIC1** (synonyms=ACCN2 Amiloride-sensitive cation channel 2, neuronal, Acid-sensing ion channel 1, ASIC1, Brain sodium channel 2, BNaC2**)** identical with human BNAC2 or BNC2), expressed in brain and dorsal root ganglions (DRG) cells, is activated by pH <7.0. At least 3 isoforms are produced by alternative splicing. ASIC-alpha or ASIC-1 alpha (isoforms 1, 526 aa; # P55926-1), ASIC-beta2 (isoforms 2, 425-aa, P55926-2, 1-185 missing in isoforms 2 and 3 and V186 replaced by another sequence) and ASIC-beta or ASIC-1b (isoforms 3, P55926-3, 559-aa, 1-185 missing and V186 replaced by another sequence).. ASIC-1 is expressed in dorsal root ganglia and sciatic nerve (at protein level). Widely distributed throughout the brain. Expressed in olfactory bulb, neo and allocortical regions, dentate granule cells, pyramidal cells of CA1-CA3 subfields of the hippocampal formation, habenula, basolateral amygdaloid nuclei, and in the Purkinje and granule cells of the cerebellum. Diffusely detected over most other regions of the basal ganglia, including thalamic nuclei, substantia nigra, striatum and globus pallidus, hypothalamus, midbrain, pons, medulla and choroid plexus. Isoform 3 is expressed only in dorsal root ganglion (DRG) while isoform 1 is expressed in DRG, spinal chord, trigeminal ganglia and the trigeminal mesencephalic nucleus. Up-regulation upon tissues inflammation is abolished by anti-inflammatory drugs.

Source of Antigen and Antibodies

Antigen	20-aa peptide of Rat ASIC1 (gene accession # P55926 ; **Designated (ASIC11-P or control/blocking peptide)** conjugated to KLH
Location	~ N-terminal, Extracellular domain 1
Ab Host/type	Rabbit, polyclonal Unpurified antiserum (cat # ASIC11-S) Aff pure IgG1 (**cat #ASIC11-A**) purified over antigen-agarose column
2-ab	**Goat Anti-rabbit IgG-HRP** cat # 20320 (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 1-20 ug/ml in paraformaldehyde fixed sections of tissues.

Specificity & Cross-reactivity

Rat ASIC11-P control peptide is 100% conserved in human and mouse sodium channel 2 or BNaC2. No significant sequence homology is detected with other ASIC-beta or other ASICs. Antibody cross-reactivity in various species has not been studied. 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 web site)

General References: Waldmann, R et al (1997) Nature, 386, 173-177; Garcia-Anoveros j et al (1997) PNAS 94, 1459-1464; Waldmann, R et al (1996) J Biol. Chem. 271, 10433.

(2) Citations of ADI's Antibodies for ASIC

Please search for ASIC publications at our web site..

*This product is for In vitro research use only.

Related material available from ADI

Antibodies ASIC1-3; EnaCs, EcAC, Cat1-2
Pre-made rat/mouse human protein Blost

ASIC11-S-A-P 70718A

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