ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

**Mammalian Degenerin 2 (MDEG2/ASIC2b) Antibodies**

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| Cat. # MDEG21-P | Rat MDEG2 Control Peptide | **SIZE**: 100 ug |
| Cat. # MDEG21-S | Rabbit Anti-rat MDEG2 antiserum #1 | **SIZE**: 100 ul |
| Cat. # MDEG21-A | Rabbit Anti-rat MDEG2 Ig G #1 (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**). NaC/DEG superfamily is characterized by intracellular N and C-termini, two transmembrane domains, and a large extracellular loop. 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** (identical with human BNAC2 or BNC2), expressed in brain and dorsal root ganglions (DRG) cells, is activated by pH <7.0. A splice variant of rat ASIC, **ASIC-β**, is expressed only in a subset of small and large diameter sensory neurons and absent in sympathetic neurons and CNS. **MDEG1/ASIC2/BNaC1,** 67% identity with ASIC1, requires more acidic pH than ASIC1 and has slower activation kinetic. **MDEG2/ASIC2b)**, a splice variant of MDEG1, is expressed in both brain and sensory neurons. MDEG2 is activated neither by mutations nor low pH. However, it acts as modulatory subunit when associated with MDEG1 and another H+-activated channel, **DRASIC/ASIC3** (Dorsal Root ganglion ASIC). DRASIC is specific for sensory neurons. In response to a drop in pH, DRASIC gives rise to a biphasic currents with poor discrimination between Na+ and K+. This sustained current may be important in pain sensation.

## Source of Antigen and Antibodies

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| **Antigen** | 18aa peptide of Rat MDEG2 ; (Gene Accession #CAA74979.1) **Designated (MDEG21-P or control peptide). conjugated to KLH** |
| **Location** | ~ N-terminal, Extracellular |
| **Ab Host/type** | Rabbit, polyclonal; Unpurified antiserum (cat # MDEG21-S) Aff pure IgG1 (**cat #MDEG21-A**) |
| **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 MDEG21-P control peptide is 88% conserved in mouse MDEG2. No significant sequence homology is detected with 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: www.4adi.com\data\abblock.html).

**General References**:
Linguegliа E al (1997) J Biol. Chem. 272, 29778-29783;
Waldmann R et al (1999) Ann. NY Acad. Sic. 869, 67-75.

*This product is for In vitro research use only.

**Related material available from ADI**

Antibodies ASIC1-3; EnaCs (α, β, γ, and δ) CLC1-7 and CLC-K1; KCC1-4; NCCK1/2, TSC/NCC; KCNQ1-4; AQP-9 and RUT; OCT and OAT, AE-3, and NACX, CNG1-4, Taste receptors 1/2, Vanniloid receptors (VR1 and VRL1)

Pre-made BrainBlot (study distribution of proteins in 12-disntict regions of rat/mouse brain)

**Recycle your blot in Just 5-10 min. (use the same blot for various ASIC)**. (no boiling or pungent mercaptoethanol).

(MDEG21-S-A-P . Rev40119S)

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